Center for Infectious Disease Research and Policy
University of Minnesota

CIDRAP Leadership Forum
Infectious Disease BRIEFING

December 13th, 2017

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

4. Avian influenza
5. Global health security
6. Cholera and Polio
7. Global TB
8. Viral Hepatitis
9. Monkeypox
10. Zika and Chikungunya
11. Plague
12. Other (MERS, Lyme disease)

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News Scan for Nov 17, 2017

Flu levels rising slightly in US, with more activity in the South

The latest information from the CDC's weekly FluView report shows slightly elevated US flu activity, with Louisiana reporting high activity.

The clear majority of states (41) are still experiencing minimal activity, but Georgia and Mississippi are seeing moderate levels of influenza-like illness (ILI), and six states (Alabama, Hawaii, Nebraska, South Carolina, South Dakota, and Wyoming) are reporting low levels of ILI.

The proportion of outpatient visits for ILI was 1.9%, below the national average of 2.2%. Influenza A is still the dominant strain, accounting for 74.9% of all samples tested. Influenza B accounted for 25.1%.

There were no variant flu cases reported in the last week, the CDC said.
Nov 17 CDC FluView

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US flu data show season ramping up

Filed Under: Influenza, General

Jim Wappes | Editorial Director | CIDRAP News | Dec 01, 2017

In what many experts predict may be a severe influenza season, the US Centers for Disease Control and Prevention (CDC) today reported signs that flu activity is stepping up, about 3 weeks earlier than it did last season.

In its weekly FluView report, which includes data through the week that ended Nov 25, the CDC said outpatient levels of influenza-like illness (ILI) are elevated in 4 of the country's 10 regions, and the proportion of visits to doctors' offices for ILI topped the national baseline for the first time this season.

In related news, CDC researchers reported that about 8% of Americans contract the flu each year, and European officials are still reporting low influenza levels.

vladans / iStock

Three states with high ILI

The CDC today said the proportion of outpatient visits for ILI has now reached 2.3%, above the national baseline of 2.2% and up from 2.0% the week before. Last year the CDC did not report that level of ILI till Dec 23.

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US flu continues to rise and expand its reach

Filed Under: Influenza, General

Lisa Schnirring | News Editor | CIDRAP News | Dec 08, 2017

With the United States experiencing an early start to its flu season, indicators edged higher again last week, with six states now reporting widespread activity, the Centers for Disease Control and Prevention (CDC) said today in its weekly update.

Michael Heimlich / iStock

The increase comes as federal, state, and local public health groups are wrapping up National Influenza Vaccination Week, an annual observance to highlight the importance of continuing flu vaccination through the holiday season and into the new year, especially in those at greater risk for complications of the disease, such as pregnant women, seniors, young children, and those with underlying health conditions.

Early snapshot of the season

In a separate update on the season so far in today's *Morbidity and Mortality Weekly Report (MMWR)*, the CDC said flu activity started ramping up in early November, with H3N2 as the predominant strain.

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News Scan for Dec 12, 2017

WHO: Flu on the rise in North America, parts of Asia

The World Health Organization (WHO) released a new global influenza update yesterday, showing that influenza is on the rise in North America, Western and Central Asia, and Europe.

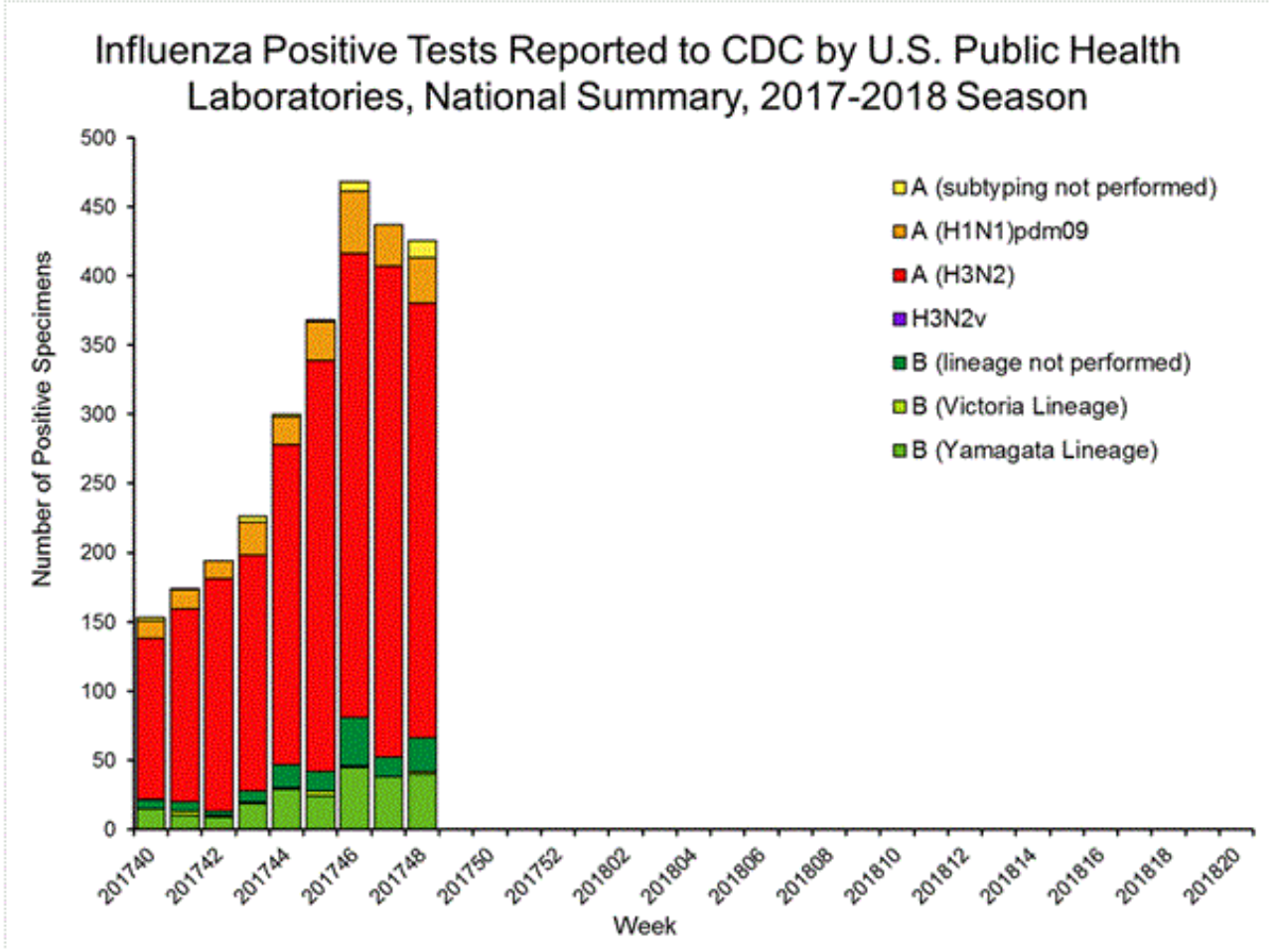
In North America, the predominant strain has been influenza A, H3N2. Europe, however, has more influenza B circulating at this time. Both influenza A and B have been detected in Asia. In Western Africa, influenza A (H1N1) detections increased in Cote d'Ivoire and Ghana. Influenza B detections were reported in Central African Republic and Mozambique.

The temperate zones of South America continue to report low influenza-like illness (ILI) activity. The Caribbean and Central America also report low ILI activity.

Canada, the United States, and Mexico have all crossed the seasonal threshold for ILI. Adults over 65 have accounted for most influenza cases in the United States and just under half in Canada.

Worldwide, laboratories reporting to the WHO have typed 62.5% of viruses as influenza A and 37.5% as influenza B.

Dec 11 WHO update


Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, 2017-2018 Season
Number of Positive Specimens
0
50
100
150
200
250
300
350
400
450
500
Week
201740
201742
201744
201746
201748
201750
201752
201802
201804
201806
201808
201810
201812
201814
201816
201818
201820
A (subtyping not performed)
A (H1N1)pdm09
A (H3N2)
H3N2v
B (lineage not performed)
B (Victoria Lineage)
B (Yamagata Lineage)

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

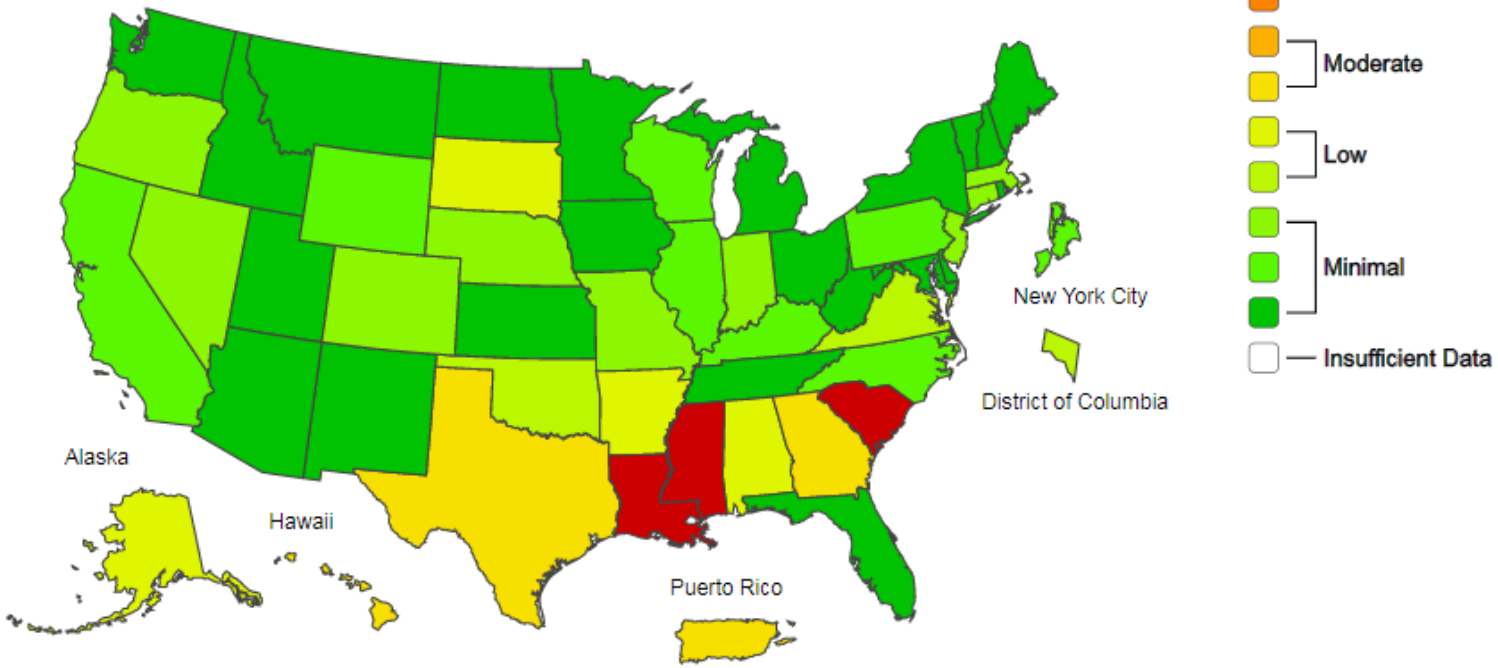
Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet

prev Play Pause next

40 41 42 43 44 45 46 47 48

weeks

2017-18 Influenza Season Week 48 ending Dec 02, 2017



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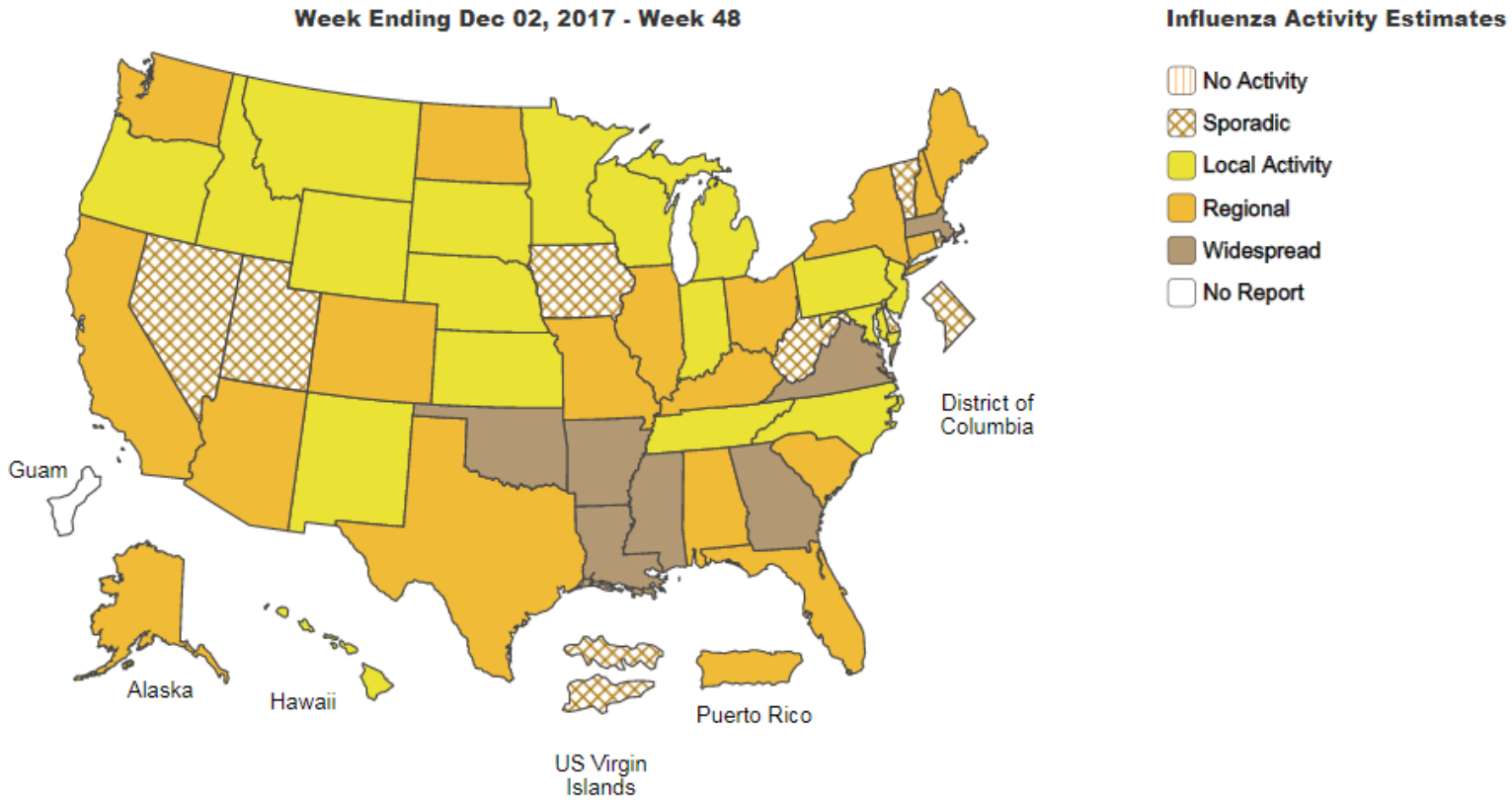
CDC 24/7: Saving Lives, Protecting People™

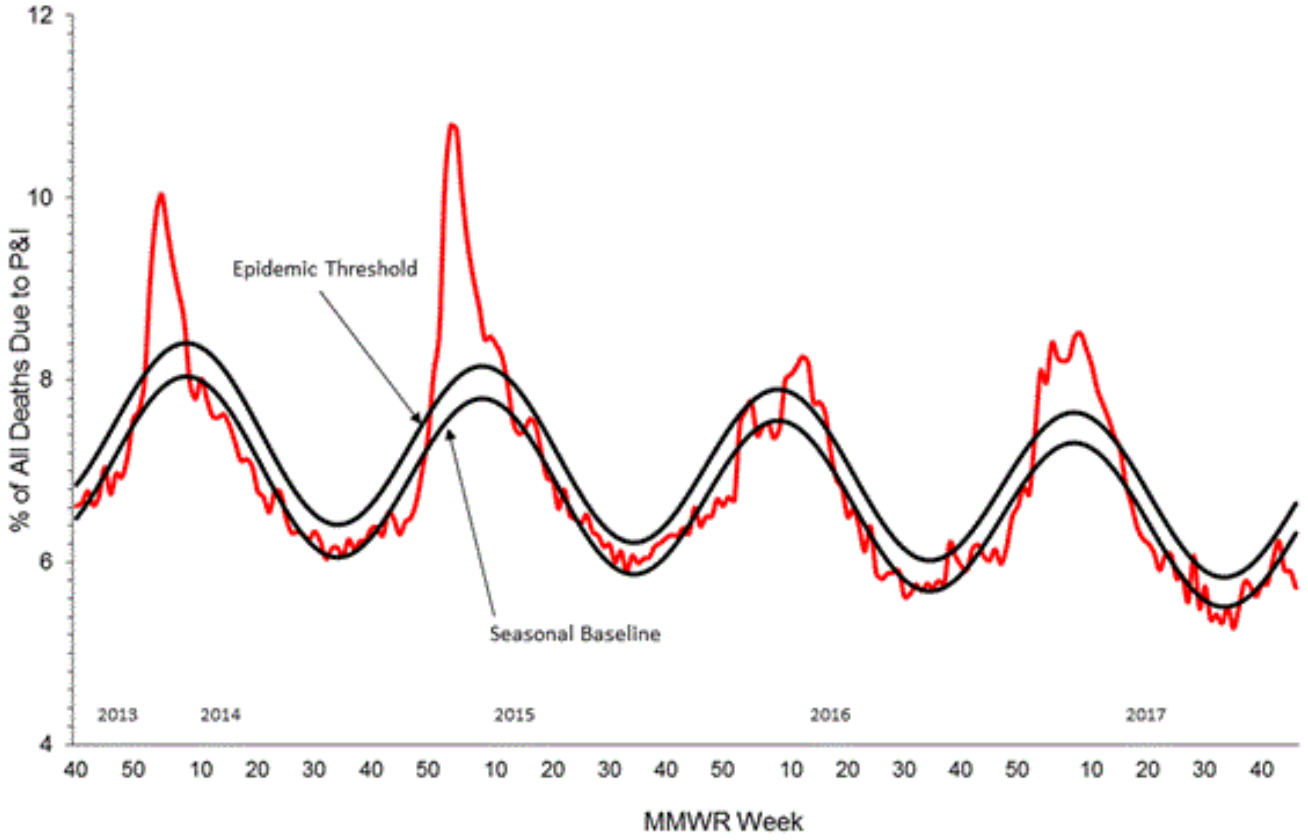
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*



Pneumonia and Influenza Mortality from the National Center for Health Statistics Mortality Surveillance System

Data through the week ending November 18, 2017, as of December 7, 2017



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Studies spotlight heavy burden of severe flu in developing nations

Filed Under: Influenza, General

Lisa Schnirring | News Editor | CIDRAP News | Dec 04, 2017

Three new studies shed more light on the burden of flu hospitalizations and deaths in developing countries, one a meta-analysis that compared levels of serious illnesses in high- and lower-income countries, and others that looked at severe infections in Rwanda and deaths in Bangladesh.

sudok1 / iStock

The reports were published in the Dec 2 early online edition of *Influenza and Other Respiratory Viruses*.

Review findings could guide priority-setting

The comparison of flu outcomes was commissioned by the World Health Organization (WHO) to get a better idea of what factors are linked to serious outcomes related to seasonal flu infection, especially in low- and middle-income countries (LMICs).

Efficacy and effectiveness of influenza vaccines: a systematic review and meta-analysis

Michael T Osterholm, Nicholas S Kelley, Alfred Sommer, Edward A Belongia

Summary

Background No published meta-analyses have assessed efficacy and effectiveness of licensed influenza vaccines in the USA with sensitive and highly specific diagnostic tests to confirm influenza.

Methods We searched Medline for randomised controlled trials assessing a relative reduction in influenza risk of all circulating influenza viruses during individual seasons after vaccination (efficacy) and observational studies meeting inclusion criteria (effectiveness). Eligible articles were published between Jan 1, 1967, and Feb 15, 2011, and used RT-PCR or culture for confirmation of influenza. We excluded some studies on the basis of study design and vaccine characteristics. We estimated random-effects pooled efficacy for trivalent inactivated vaccine (TIV) and live attenuated influenza vaccine (LAIV) when data were available for statistical analysis (eg, at least three studies that assessed comparable age groups).

Findings We screened 5707 articles and identified 31 eligible studies (17 randomised controlled trials and 14 observational studies). Efficacy of TIV was shown in eight (67%) of the 12 seasons analysed in ten randomised controlled trials (pooled efficacy 59% [95% CI 51–67] in adults aged 18–65 years). No such trials met inclusion criteria for children aged 2–17 years or adults aged 65 years or older. Efficacy of LAIV was shown in nine (75%) of the 12 seasons analysed in ten randomised controlled trials (pooled efficacy 83% [69–91]) in children aged 6 months to 7 years. No such trials met inclusion criteria for children aged 8–17 years. Vaccine effectiveness was variable for seasonal influenza: six (35%) of 17 analyses in nine studies showed significant protection against medically attended influenza in the outpatient or inpatient setting. Median monovalent pandemic H1N1 vaccine effectiveness in five observational studies was 69% (range 60–93).

Interpretation Influenza vaccines can provide moderate protection against virologically confirmed influenza, but such protection is greatly reduced or absent in some seasons. Evidence for protection in adults aged 65 years or older is lacking. LAIVs consistently show highest efficacy in young children (aged 6 months to 7 years). New vaccines with improved clinical efficacy and effectiveness are needed to further reduce influenza-related morbidity and mortality.

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See Online/Comment
DOI:10.1016/S1473-3099(11)70319-4

Center for Infectious Disease Research and Policy, University of Minnesota, MN, USA (Prof M T Osterholm PhD, N S Kelley PhD); **Department of International Health, and the Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA** (Prof A Sommer MD); **and Epidemiology Research Center, Marshfield Clinic Research Foundation, Marshfield, WI, USA** (EA Belongia MD)

Correspondence to:
Prof Michael Osterholm, Center for Infectious Disease Research and Policy, University of Minnesota, MN 55455, USA
mtosa@umn.edu

Introduction

The main strategy for prevention and control of seasonal and pandemic influenza for the past 60 years has been vaccination.[1,2] The first population-scale use of an inactivated influenza vaccine was in US military personnel in 1945.[1] In 1960, the US Surgeon General, in response to substantial morbidity and mortality during the 1957–58 pandemic, recommended annual influenza vaccination for individuals with chronic debilitating disease, people aged 65 years or older, and pregnant women.[3] This recommendation was made without data for vaccine efficacy or effectiveness for these high-risk populations. Instead, it was made on the basis of studies showing efficacy in young, healthy military recruits with clinical illness or seroconversion as primary measures of infection. In 1964, the Advisory Committee on Immunization Practices (ACIP) reaffirmed this recommendation but noted the absence of efficacy data.[4] Because of the longstanding public health recommendation of annual vaccination in the elderly and other high-risk groups, such patients have been excluded from placebo-controlled randomised clinical trials in the USA for the past 50 years. The ACIP supports the widely held view that inclusion of individuals at high-risk of influenza in placebo-controlled trials would be unethical.[3]

In 2010, the ACIP established the first recommendation of national universal seasonal influenza vaccination.[5] Vaccination every year is now recommended with trivalent inactivated vaccine (TIV) for all individuals aged 6 months or older, or live attenuated influenza vaccine (LAIV) for healthy non-pregnant people aged 2–49 years.[5] In the USA, TIV has been used since 1978 and accounts for approximately 90% of influenza vaccine given at present.[6] The LAIV was first approved for use in the USA in 2003 and accounts for approximately 9% of the vaccine given.[7,8] The universal influenza vaccination recommendation came after a decade of incremental changes during which the ACIP expanded recommendations to include an ever-increasing proportion of the US population.

Previous meta-analyses of TIV or LAIV efficacy and effectiveness have included studies that used diagnostic

THE COMPELLING NEED FOR GAME-CHANGING INFLUENZA VACCINES

AN ANALYSIS OF THE INFLUENZA VACCINE ENTERPRISE AND RECOMMENDATIONS FOR THE FUTURE

OCTOBER 2012

CIDRAP
Center for Infectious Disease Research & Policy
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The NEW ENGLAND JOURNAL of MEDICINE

Perspective

Chasing Seasonal Influenza — The Need for a Universal Influenza Vaccine

Catharine I. Paules, M.D., Sheena G. Sullivan, M.P.H., Ph.D., Kanta Subbarao, M.B., B.S., M.P.H., and Anthony S. Fauci, M.D.

As clinicians in the United States prepare for the start of another influenza season, experts have been watching the Southern Hemisphere winter for hints of what might be in store for us in the North. Reports from Australia have caused mounting concern, with record-high numbers of laboratory-confirmed influenza notifications and outbreaks and higher-than-average numbers of hospitalizations and deaths.[1] The number of notifications reached 215,280 by mid-October, far exceeding the 59,022 cases reported during the 2009 H1N1 influenza pandemic, according to the Australian Government Department of Health. Influenza A (H3N2) viruses predominated, and the preliminary estimate of vaccine effectiveness against influenza A (H3N2) was only 10%. The implications for the Northern Hemisphere are not clear, but it is of note that the vaccine for this upcoming season has the same composition as that used in the Southern Hemisphere. As we prepare for a potentially severe influenza season, we must consider whether our current vaccines can be improved and whether longer-term, transformative vaccine approaches are needed to minimize influenza-related morbidity and mortality.

Seasonal influenza epidemics cause 3 million to 5 million severe cases and 300,000 to 500,000 deaths globally each year, according to the World Health Organization (WHO). The United States alone sees 140,000 to 710,000 influenza-related hospitalizations and 12,000 to 56,000 deaths each year, with the highest burden of disease affecting the very young, the very old, and people with coexisting medical conditions.[2]

The cornerstone of influenza prevention and epidemic control is strain-specific vaccination. Since influenza viruses are subject to continual antigenic changes ("antigenic drift"), vaccine updates are recommended by the WHO each February for the Northern Hemisphere and each September for the Southern Hemisphere. This guidance relies on global viral surveillance data from the previous 5 to 8 months and occurs 6 to 9 months before vaccine deployment. In addition, there are always several closely related strains circulating; therefore, experts must combine antigenic and

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Flu Scan for Dec 06, 2017

Study shows H3N2 vaccine protection drops sharply within 6 months

A new meta-analysis of 14 studies shows that vaccine effectiveness (VE) against influenza A H3N2 drops 33% within 6 months of immunization, while VE against influenza B declines by 19%. A small VE decline against influenza A H1N1 was not statistically significant.

The data offer guidance to countries planning the timing of flu shots: Countries with cooler climates see flu seasons that span 6 months, but year-round protection from the flu is required in temperate and tropical regions.

To conduct the study, the authors looked at VE data collected in Europe, the United States, Kenya, Thailand, and Australia. Flu seasons from 2009 to 2016 were included in the study.

The authors said there is still no way to calculate the rate of declining protection, but by 180 days after vaccine administration, protection against H3N2 drops significantly.

The authors suggest that multiple vaccination throughout the year may be a way to combat waning VE in some populations. "Vaccinating every six months in the tropics is attractive due to the simplicity, low cost, and safety profile of the standard dose inactivated vaccine."

Dec 6 *J Infect Dis* study

The Duration of Influenza Vaccine Effectiveness: A Systematic Review, Meta-analysis and Meta-regression of Test-Negative Design Case-control Studies

Barnaby Young[1,2], Sapna Sadarangani[1,2], Lili Jiang[3], Annelies Wilder-Smith[1,2,4], Mark Chen I-Cheng[1,3]

(1) Institute of Infectious Diseases and Epidemiology (IIDE), Tan Tock Seng Hospital, 11 Jalan Tan Tock Seng Hospital, Singapore 308433

(2) Lee Kong Chian School of Medicine, Nanyang Technological University, 11 Mandalay road, Singapore 308232

(3) Saw Swee Hock School of Public Health, Tahir Foundation Building, National University of Singapore, 12 Science Drive 2, Singapore 117549

(4) Institute of Public Health, University of Heidelberg, Germany

Corresponding author: Dr Barnaby Young, Tel: +65 6357 7458, Fax: +65 6252 4056 email: Barnaby_young@ttsh.com.sg

Running title: Influenza vaccine effectiveness

Summary: The duration of influenza vaccine effectiveness is important for planning vaccination programs. This review found consistent evidence for a decline in effectiveness over a typical temperate winter season, and protection is unlikely to last year-round, as required in tropical regions.

Efficacy and Safety of Oseltamivir in Children: Systematic Review and Individual Patient Data Meta-analysis of Randomized Controlled Trials

Ryan E. Malosh, PhD[1]; Emily T. Martin, PhD[1]; Terho Heikkinen, MD[2]; W. Abdullah Brooks MD[3]; Richard J. Whitley, MD[4]; Arnold S. Monto, MD[1]

Author Affiliations

[1] University of Michigan School of Public Health, Ann Arbor MI

[2] University of Turku and Turku Hospital, Turku Finland

[3] Bloomberg School of Public Health, Johns Hopkins University, Baltimore MD

[4] University of Alabama Birmingham, Birmingham AL

Target Journal: Clinical Infectious Diseases

Key words: influenza, oseltamivir, children, meta-analysis

Summary: We conducted a meta-analysis of the efficacy and safety of oseltamivir in children. Treatment reduced both the duration of illness and risk of otitis media in subjects with influenza. Evaluating efficacy in pediatric patients with asthma may require alternate endpoints.

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Health worker firings spark debate on mandating flu vaccine

Filed Under: Influenza Vaccines

Stephanie Soucheray | News Reporter | CIDRAP News | Nov 30, 2017

College of DuPage Newsroom / Flickr cc

"Whenever you do something new it ruffles feathers." That's how Rajesh Prabhu, MD, an infectious disease specialist and the chief patient safety officer with Essentia Health of Duluth, Minn., explained the company's decision to mandate that all healthcare employees, staff, and volunteers get the seasonal flu vaccine this year, a decision that led to dozens being fired.

Employees with any patient contact were required to get vaccinated by Nov 10 or risk termination, which has happened to 50 Essentia employees so far. Now, the union that represents Essentia's nurses, the Minnesota Nurses Association (MNA), is planning to file a formal grievance against the company.

"In no way are nurses against the flu vaccine," said Rick Fuentes, MNA spokesman. "But mandating vaccination is not as effective as voluntary programs."

"We have 13,900 employees," said Maureen Talarico, a media relations specialist with Essentia Health. "Only 50 were let go." Essential manages 15 hospitals and 75 clinics in Minnesota, Idaho, Wisconsin, and North Dakota.

PLOS ONE

RESEARCH ARTICLE

Influenza Vaccination of Healthcare Workers: Critical Analysis of the Evidence for Patient Benefit Underpinning Policies of Enforcement

Gaston De Serres[1,2☯]*, Danuta M. Skowronski[3,4☯], Brian J. Ward[5], Michael Gardam[6], Camille Lemieux[6], Annalee Yassi[4], David M. Patrick[3,4], Mel Krajden[3,4], Mark Loeb[7], Peter Collignon[8,9], Fabrice Carrat[10,11,12]

1 Institut national de santé publique du Québec, Quebec City, Quebec, Canada, **2** Laval University, Quebec City, Quebec, Canada, **3** British Columbia Centre for Disease Control, Vancouver, British Columbia, Canada, **4** University of British Columbia, Vancouver, British Columbia, Canada, **5** Research Institute of the McGill University Health Centre, Montreal, Quebec, Canada, **6** University of Toronto, University Health Network, Toronto, Ontario, Canada, **7** McMaster University, Faculty of Health Sciences, Hamilton, Ontario, Canada, **8** Australian National University, Acton, Australia, **9** Canberra Hospital, Garran, ACT, Australia, **10** Institut National de la Santé et de la Recherche Médicale, Institut Pierre Louis d'Epidémiologie et de Santé Publique, Paris, France, **11** Sorbonne Universités, Institut Pierre Louis d'Epidémiologie et de Santé Publique, Paris, France, **12** Assistance Publique-Hôpitaux de Paris, Hôpital Saint Antoine, Unité de Santé Publique, Paris, France

☯ These authors contributed equally to this work.
* gaston.deserres@inspq.qc.ca

OPEN ACCESS

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Data Availability Statement: All relevant data are within the paper.

Funding: Funding support in the form of wages for Dr. Gaston De Serres was provided foremost by the Quebec Public Health Institute (Institut national de santé publique du Québec), Québec, Canada and in part by the Ontario Nurses' Association. Co-authors were supported by their respective institutions and no other external funding was provided. These funders had no role in study

Abstract

Background

Four cluster randomized controlled trials (cRCTs) conducted in long-term care facilities (LTCFs) have reported reductions in patient risk through increased healthcare worker (HCW) influenza vaccination. This evidence has led to expansive policies of enforcement that include all staff of acute care hospitals and other healthcare settings beyond LTCFs. We critique and quantify the cRCT evidence for indirect patient benefit underpinning policies of mandatory HCW influenza vaccination.

Methods

Plausibility of the four cRCT findings attributing indirect patient benefits to HCW influenza vaccination was assessed by comparing percentage reductions in patient risk reported by the cRCTs to predicted values. Plausibly predicted values were derived according to the basic mathematical principle of dilution, taking into account HCW influenza vaccine coverage and the specificity of patient outcomes for influenza. Accordingly, predicted values were calculated as a function of relevant compound probabilities including vaccine efficacy (ranging 40–60% in HCWs and favourably assuming the same indirect protection conferred through them to patients) × change in proportionate HCW influenza vaccine coverage (as reported by each cRCT) × percentage of a given patient outcome (e.g. influenza-like illness (ILI) or all-cause mortality) plausibly due to influenza virus. The number needed to vaccinate (NNV) for HCWs to indirectly prevent patient death was recalibrated based on real patient

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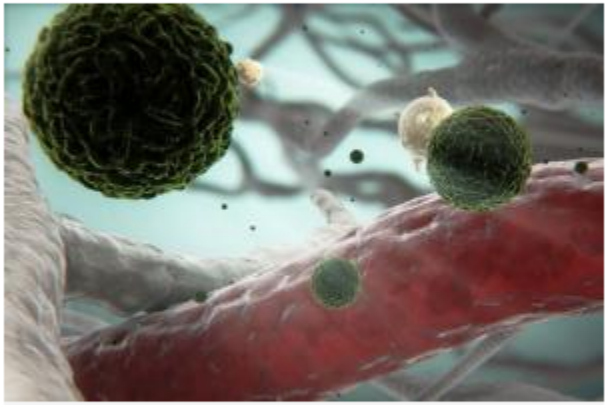
Dengue study adds to evidence for antibody enhancement

Filed Under: Dengue; Zika

Stephanie Soucheray | News Reporter | CIDRAP News | Nov 08, 2017

A study presented at a scientific meeting this week and published in the journal *Science* provides robust evidence of antibody dependent enhancement (ADE) in dengue, a phenomenon observed for the last half century unique to the flavivirus.



Sanofi Pasteur / Flickr cc

Scott Halstead, MD, a pioneering figure in dengue research, first described ADE in the 1970s, noting that once a person has had one of four strains of dengue, subsequent reinfections can be more severe. Instead of offering protection, antibodies to the virus enhance the disease.

The phenomenon has been described by Halstead in primates, and in mothers who pass some dengue antibodies on to their babies. Most recently, it was a controversial result that appeared in studies surrounding the phase 3 trial for Sanofi Pasteur's Dengvaxia. In that setting, children who were dengue naive at the time of vaccination were more likely to develop severe dengue virus when exposed to the disease in the following 12 months. The vaccine appeared to act as a primer for ADE.

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Sanofi restricts dengue vaccine but downplays antibody enhancement

Filed Under: Dengue

Stephanie Soucheray | News Reporter | CIDRAP News | Dec 01, 2017

Yesterday Sanofi Pasteur, maker of Dengvaxia, a promising dengue vaccine, announced it was changing the labeling on the vaccine to limit its use to people who have had previous exposure to dengue virus.

Sanofi Pasteur / Flickr cc

Dengue vaccine production.

The company said a new analysis shows that, for dengue-naive recipients, the vaccine makes future dengue episodes more severe. According to a press release from Sanofi, vaccination should not be recommended to people who have not been infected by dengue virus.

Pioneering dengue researchers Scott Halstead, MD, and Philip K. Russell, MD, PhD, predicted this move nearly 2 years ago. They had seen results from Dengvaxia's trials showing evidence of antibody-dependent enhancement (ADE), a dengue phenomenon that makes repeat infections more severe and can cause severe illness after vaccination in those who haven't been previously exposed to the virus.

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News Scan for Dec 05, 2017

WHO to conduct full review of Dengvaxia

Yesterday the World Health Organization (WHO) announced it will be conducting a full review of Dengvaxia, the Sanofi Pasteur dengue vaccine, by the end of the year.

Last week, Sanofi said the vaccine should only be administered to people who had a previous dengue infection, because for dengue-naive recipients, the vaccine could cause more severe disease. The WHO reiterated this recommendation on Nov 30, according to a news story from Reuters.

Dengvaxia was a promising dengue vaccine more than 20 years and $1 billion in the making. Results from phase 3 trials, however, showed that the vaccine was related to more severe disease in patients, including children, who were immunized before acquiring a dengue infection.

The Manila Times is reporting that the Philippine's Food and Drug Administration ordered a recall of Dengvaxia yesterday. The Philippines was the first country to halt dengue immunizations after Sanofi's announcement last week. According to the *Manila Times*, the vaccine has been administered to more than 700,000 people in the Philippines in recent years.

Dec 4 Reuters story
Dec 4 *Manila Times* story

REUTERS

#WORLD NEWS DECEMBER 10, 2017 / 11:55 AM / UPDATED 6 HOURS AGO

Exclusive - Philippines defied experts' advice in pursuing dengue immunisation programme

MANILA (Reuters) - As she announced in January 2016 that the Philippines would immunize one million children with a new dengue vaccine, the nation's then health secretary Janette Garin boasted it was a world-first and a tribute to her country's "expertise" in research.

At the time, it seemed the Philippines could be on the cusp of a breakthrough to combat a potentially lethal tropical virus that had been endemic in large parts of the Southeast Asian nation for decades.

Almost two years later, the programme lies in tatters and has been suspended after Sanofi Pasteur, a division of French drug firm Sanofi (SASY.PA), said at the end of last month the vaccine itself may in some cases increase the risk of severe dengue in recipients not previously infected by the virus.

REUTERS

#WORLD NEWS DECEMBER 11, 2017 / 5:47 AM / A DAY AGO

Philippine senator criticizes 'reckless disregard' in dengue vaccine program

MANILA (Reuters) - Philippine public officials showed "reckless disregard of processes" in carrying out a program to immunize hundreds of thousands of children, a senator leading an investigation into the government's use of a new dengue vaccine said on Monday.

On Dec. 1, the Philippines halted use of Dengvaxia after its maker, French drug firm Sanofi said the vaccine itself might, in some cases, increase the risk of severe dengue in recipients not previously infected by the virus.

Dengue is not as serious as malaria, but it kills about 20,000 people each year and infects hundreds of millions as it spreads rapidly in many parts of the world. The Philippines reports an average of 200,000 cases every year, the DOH said.

Senator Richard Gordon, chairman of the investigation panel, said the program's approval and procurement were done with "undue haste", given how quickly the department of health (DOH)got funding for the 3.5-billion-peso ($69.55-million) campaign.

STAT

Sanofi scandal in the Philippines could spread dangerous mistrust of vaccines

By ED SILVERMAN @Pharmalot / DECEMBER 11, 2017

In an era when too many people remain suspicious of vaccines, one of the world's largest manufacturers may have made matters worse while trying to control dengue fever.

For the past two weeks, Sanofi has been engulfed by scandal in the Philippines after disclosing that its Dengvaxia vaccine could worsen — rather than prevent — future cases of the mosquito-borne virus in people who had not previously been infected. About 830,000 children in the Philippines were vaccinated; now the government is demanding a $59 million refund and probing whether the vaccine was approved improperly.

Unfortunately, there are indications that the company, which could use a blockbuster product, should have taken its corporate foot off the gas pedal.

REUTERS

#HEALTH NEWS DECEMBER 12, 2017 / 8:23 PM / UPDATED 13 HOURS AGO

Did Sanofi, WHO ignore warning signals on dengue vaccine?

CHICAGO/LONDON (Reuters) - When French drugmaker Sanofi published the results of clinical trials of children given its dengue vaccine two years ago, the overall findings were that it protected against the world's biggest and fastest growing mosquito-borne disease.

But the trial also showed that in the third year after receiving the Dengvaxia inoculation, younger children were more likely to end up in hospital with a severe case of dengue than those who didn't get the vaccine.

The study's authors cited two main possibilities: the children had immature immune systems that made the vaccine less protective, or the vaccine itself made them more susceptible to severe disease if they had never had dengue and later became infected.

More than two years later, it turns out the latter was the primary factor - a revelation at the end of last month that has triggered alarm among hundreds of thousands of anxious parents in the Philippines, where the vaccine has been given to over 830,000 children.

World Health Organization

WHO advises Dengvaxia be used only in people previously infected with dengue

13 DECEMBER 2017 - Following a consultation of the Global Advisory Committee on Vaccine Safety, the World Health Organization (WHO) finds that the dengue vaccine CYD-TDV, sold under the brand name Dengvaxia, prevents disease in the majority of vaccine recipients but it should not be administered to people who have not previously been infected with dengue virus.

This recommendation is based on new evidence communicated by the vaccine's manufacturer (Sanofi Pasteur), indicating an increase in incidence of hospitalization and severe illness in vaccinated children never infected with dengue.

The WHO Global Advisory Committee on Vaccine Safety considered the company's new results from clinical trial data analyses. Those studies indicate that increased risk of severe dengue disease in people who have never been infected affects about 15% of the vaccinated individuals. The magnitude of risk is in the order of about 4 out of every 1000 seronegative patients vaccinated who developed severe dengue disease during five years of observation. The risk of developing severe dengue disease in non-vaccinated individuals has been calculated as 1.7 per 1000 over the same period of observation. By contrast, for the 85% who have had dengue disease before immunization, there is a reduction of 4 cases of severe dengue per 1 000 who are vaccinated.

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

4. Avian influenza
5. Global health security
6. Cholera and Polio
7. Global TB
8. Viral Hepatitis
9. Monkeypox
10. Zika and Chikungunya
11. Plague
12. Other (MERS, Lyme disease)

AMERICA IS ONE KILLER ORGANISM AWAY FROM A LIVING NIGHTMARE THAT THREATENS ALL WE HOLD DEAR....

LIVING TERRORS

"Osterholm sounds a frightening alarm...the threats he describes are bone chilling." —*Publishers Weekly*

What America Needs to Know to Survive the Coming Bioterrorist Catastrophe

MICHAEL T. OSTERHOLM, Ph.D., M.P.H.,
and JOHN SCHWARTZ

"A powerful book that looks at the threat of emerging diseases with clarity and realism, and offers us not just fear but plans." —**RICHARD PRESTON, author of *The Hot Zone* and *The Demon in the Freezer***

DEADLIEST ENEMY

Michael T. Osterholm, PhD, MPH
and Mark Olshaker

OUR WAR AGAINST KILLER GERMS

Newsweek

NORTH KOREA BIOLOGICAL WEAPONS: WHAT WE KNOW ABOUT KIM JONG UN'S OTHER WEAPONS OF MASS DESTRUCTION

BY SOFIA LOTTO PERSIO ON 11/7/17 AT 3:32 AM

North Korea's nuclear threat may presently have the world's attention but ballistic missiles capable of reaching the U.S. mainland aren't the only weapons of mass destruction in Kim Jong Un's arsenal.

Pyongyang's nuclear capabilities are well understood and high on the agenda of President Donald Trump in his ongoing five-country trip to Asia, but a recent study from the Belfer Center for Science and International Affairs at Harvard Kennedy School reported on a less well known aspect of North Korea's armaments program: biological weapons.

Andrew C. Weber, former assistant secretary of Defense for Nuclear, Chemical and Biological Defense Programs, commissioned the report over concerns that the biological weapons threat received too little attention.

"This is an issue that is generally neglected by the national security community," he tells *Newsweek*. "Biological weapons are more complicated [than nuclear weapons]; they do not lend themselves to easy-to-understand pictures."

The Washington Post

Microbes by the ton: Officials see weapons threat as North Korea gains biotech expertise

By Joby Warrick December 10 at 6:38 PM

Five months before North Korea's first nuclear test in 2006, U.S. intelligence officials sent a report to Congress warning that secret work also was underway on a biological weapon. The communist regime, which had long ago acquired the pathogens that cause smallpox and anthrax, had assembled teams of scientists but seemed to be lacking in certain technical skills, the report said.

"Pyongyang's resources presently include a rudimentary biotechnology infrastructure," the report by the director of national intelligence explained.

A decade later, the technical hurdles appear to be falling away. North Korea is moving steadily to acquire the essential machinery that could potentially be used for an advanced bioweapons program, from factories that can produce microbes by the ton, to laboratories specializing in genetic modification, according to U.S. and Asian intelligence officials and weapons experts.

Meanwhile, leader Kim Jong Un's government also is dispatching its scientists abroad to seek advanced degrees in microbiology, while offering to sell biotechnology services to the developing world.

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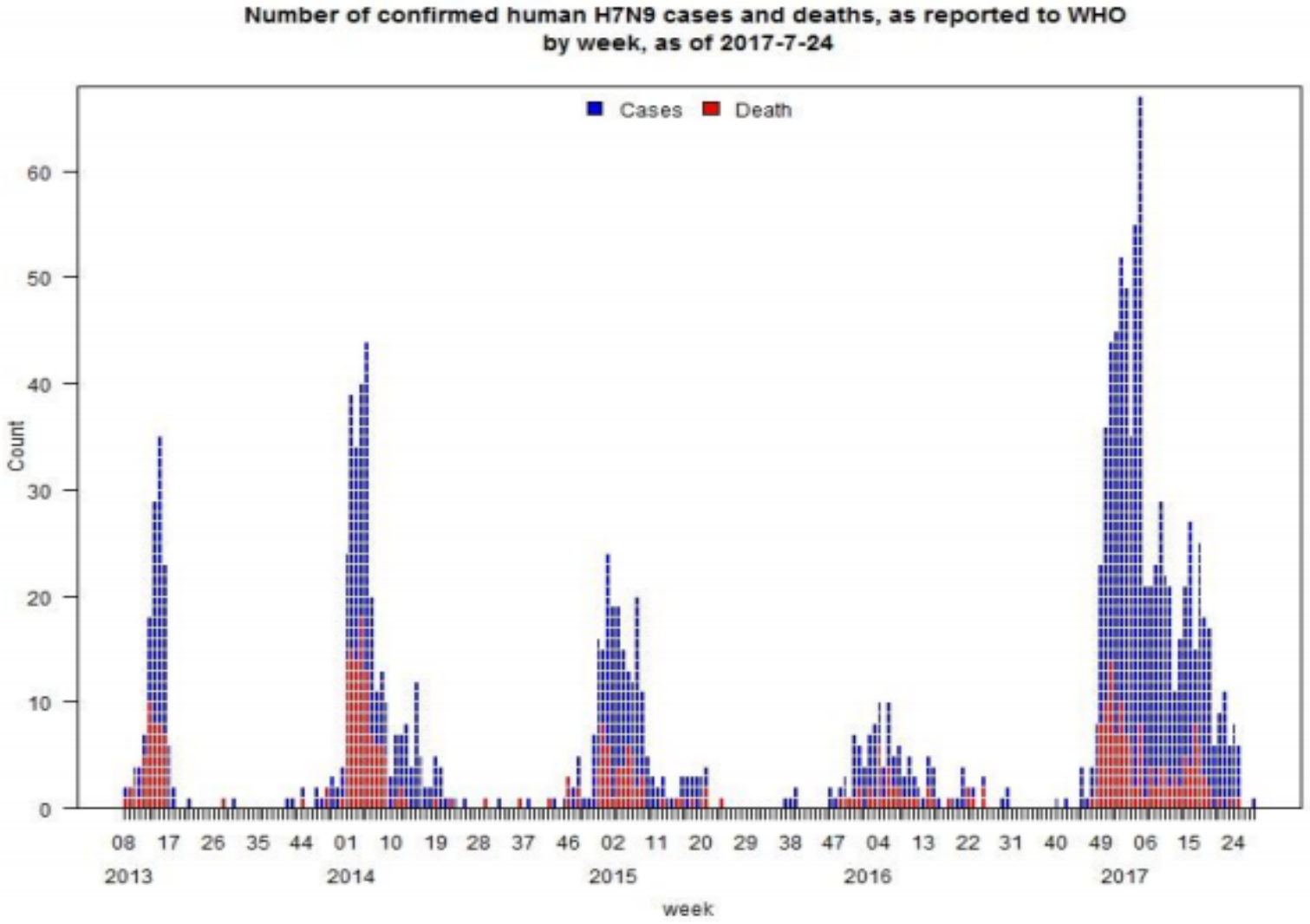
11. Plague
12. Other (MERS, Lyme disease)

World Health Organization

Figure 1: Epidemiological curve of avian influenza A(H7N9) cases in humans by week of onset, 2013-2017



FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS
for a world without hunger

H7N9 situation update

24 November 2017, 12:00 hours; Rome

Overview

Hazard: Influenza A(H7N9) virus with pandemic potential.
Country: China; imported cases in Malaysia (1) and Canada (2).
Number of human cases: 1,622 confirmed; 619 deaths (since February 2013).
New findings in birds / environment since last update (25 October 2017): 0
New human cases since last update (25 October 2017): 0

***Map 1**. Human cases and positive findings in birds or the environment*

Click to enlarge - *Note:* Human cases are depicted in the geographic location where they were reported; for some cases, exposure may have occurred in a different geographic location. Precise location of 63 human cases in Anhui (2), Beijing (2), Guangdong (1), Guangxi (1), Hebei (3), Hunan (1), Hubei (2), Jiangsu (2), Jiangxi (6), Sichuan (2), Zhejiang (3) and unknown (38) Provinces are currently not known, these cases are therefore not shown on the map.

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

News Scan for Dec 04, 2017

China reports infections from H7N9, H9N2 avian flu viruses

China has detected two new human avian influenza cases, one involving an adult sickened by H7N9 and the other a young child infected with H9N2, according to government reports in the region.

The H7N9 illness, China's first since September, involves a 64-year-old man in the Yunnan province city of Kunming. His symptoms began on Nov 21, Hong Kong's Centre for Health Protection (CHP) said in a Dec 2 statement, based in information from mainland health officials. The man is hospitalized in serious condition.

An investigation into the source of his illness found that the man had contact with dead poultry.

The case might mark the beginning of China's sixth wave of H7N9 activity, though the country is known to report sporadic cases throughout the year. The case appears to lift the global number of H7N9 cases to 1,565, according to numbers in a regular summary report from the CHP.

Meanwhile, Macao's health bureau said yesterday in a report on China's new H7N9 case that the mainland has also reported a new H9N2 infection, involving a 20-month-old girl from Changsha City in Hunan province, according to a government statement translated and posted by Avian Flu Diary, an infectious disease news blog. The girl's symptoms began on Nov 27, her infection is not severe, and she apparently had exposure to a live-poultry market.

So far, five H9N2 infections have been reported this year. The virus is endemic in Chinese poultry, and infections involving the strain are more common in children than in adults.

Dec 2 CHP statement
Nov 28 CHP weekly avian influenza report
Dec 4 Avian Flu Diary post

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

News Scan for Dec 01, 2017

Flu expert says H7N9 viruses are rare 2nd warning of public health threat

The world rarely receives advance notice of a significant public health threat, but the detection of the highly pathogenic form of H7N9 avian influenza in China serves as a second warning, an expert from the World Health Organization's collaborating center in Australia said today in a *Cell Research* commentary.

Recent studies found a high level of genetic diversity in H7N9 viruses from China, including seven highly pathogenic viruses bearing four different hemagglutinin sequences. In addition, an isolate from a human showed a mutation that may make it more virulent. So far, 28 human infections with highly pathogenic H7N9 have been reported.

Kanta Subbarao, MBBS, MPH, wrote that the emergence of highly pathogenic H7N9 represents a second warning in two ways. First, uncontrolled spread of highly pathogenic H5N1 allowed the virus to become enzootic, allowing it to evolve, spread, and cause severe sporadic infections in humans. Second, low-pathogenic H7N9 viruses in 2017 spread more widely, and scientists found that highly pathogenic viruses came from more than one low-pathogenic precursor. "Once is a warning, twice is a lesson; we cannot afford to ignore the spread of H7N9 viruses and allow them to become enzootic," she wrote.

Focusing control measures on only poultry flocks infected with highly pathogenic H7N9 won't solve the problem, Subbarao said. Both forms of H7N9 need to be eradicated from avian species, and human isolates need to be monitored very closely.

Dec 1 *Cell Res* commentary

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

H5N6 sickens Chinese man, strikes duck farm in South Korea

Filed Under: Avian Influenza (Bird Flu)

Lisa Schnirring | News Editor | CIDRAP News | Nov 20, 2017

In new H5N6 avian flu developments, a Chinese man is hospitalized in critical condition after he likely contracted the virus from poultry, and South Korea reported an outbreak from the highly pathogenic virus at a commercial duck farm.

jedsadabodin/ iStock

Poultry outbreaks from H5N6 are especially concerning, because the virus can infect humans, and illnesses are often fatal. With the announcement of the latest human case, 18 infections have been reported since 2014, all from China. At least 10 of the patients died.

South Korea's latest H5N6 outbreak is its first since April, and news of the event was followed by a government announcement that surveillance has turned up highly pathogenic avian flu—one of the viruses confirmed as H5N6—in environmental samples from wild bird areas in two different parts of the country.

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

H5N6 avian flu reassortant found in recent Korean outbreak

Filed Under: Avian Influenza (Bird Flu)

Lisa Schnirring | News Editor | CIDRAP News | Nov 27, 2017

South Korean government officials today announced tests on the highly pathogenic H5N6 avian flu virus found in a recent outbreak in North Jeolla province is a new reassortant and not the version that has sparked earlier outbreaks in Asian countries and in some instances sickened humans.

Pogonici / iStock

In other avian flu developments, Japan reported more H5N6 findings in wild birds, Italy and Russia detailed more H5N8 events, and Germany noted an outbreak involving low-pathogenic H5N2.

Genetic testing part of outbreak probe

South Korea's Animal and Plant Quarantine Agency (APQA) said H5N6 genetic findings were part of an investigation into the source of an outbreak in Gochang County in North Jeolla province, Yonhap News reported today. Scientists analyzed viruses from 852 bird corpses and droppings from wild birds.

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

H5N6 avian flu reassortant confirmed in Dutch outbreak

Filed Under: Avian Influenza (Bird Flu)

Lisa Schnirring | News Editor | CIDRAP News | Dec 11, 2017

A reassortant H5N6 avian flu virus detected in three Asian nations over the past few weeks has been confirmed in an outbreak in the Netherlands.

Lawrence Wright / Flickr cc

In other developments, South Korea—one of the countries that has already reported outbreaks from the H5N6 reassortant this season—reported another at a duck farm. And Cambodia reported an H5N1 avian flu outbreak in poultry, its first in nearly a year.

Dutch flock numbered 16,000 birds

The outbreak in the Netherlands was first reported on Dec 8, and government officials had said initial tests from the duck farm near the city of Dronten was likely a highly pathogenic strain. In a notification yesterday from the World Organization for Animal Health (OIE), the country's economic affairs ministry said the outbreak began on Dec 7 at a fattening-duck farm near the town of Biddinghuizen.

The virus killed 40 of 15,985 birds, and the surviving ducks were culled to curb the spread of the virus. Tests revealed the H5N6 subtype is a reassortment linked to H5N8 and not the Asian zoonotic H5N6.

REUTERS

#HEALTH NEWS DECEMBER 7, 2017 / 9:28 AM / 4 DAYS AGO

South African egg prices seen rising 20 percent after avian flu outbreak

JOHANNESBURG (Reuters) - Egg prices in South Africa are expected to increase by as much as 20 percent after an outbreak of the highly pathogenic avian flu in June forced farmers to cull egg laying birds, industry experts said on Thursday.

The outbreak of avian flu prompted farmers to cull millions of birds and neighboring countries including Zimbabwe, Namibia and Botswana to ban poultry imports from South Africa.

Industry experts said in October commercial egg production had tumbled 17 percent and over 1,000 workers lost their jobs in the wake of the outbreak of avian flu.

The Seattle Times

Bird flu: Dutch farmers ordered to keep poultry indoors

Originally published December 8, 2017 at 5:53 am

By The Associated Press

The Associated Press

THE HAGUE, Netherlands (AP) — The Dutch government has ordered the country's farmers to keep all poultry indoors after bird flu was discovered at a duck farm.

Authorities issued the order Friday after a suspected highly pathogenic variant of the H5 bird flu was discovered at the farm in Biddinghuizen, about 70 kilometers (45 miles) east of Amsterdam. All 16,000 ducks at the farm will be culled.

Zoos also have been ordered to prevent their birds from coming into contact with wild waterfowl.

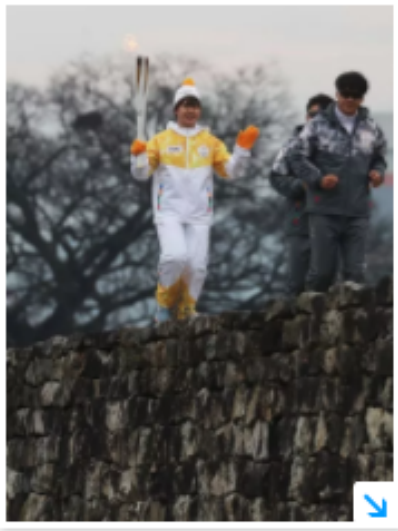
The Netherlands has a huge poultry industry, producing eggs and meat that are exported around the world.

Many egg producers suffered major financial losses earlier this year after the illegal use of a pesticide on laying hens sparked a food scare in Europe and beyond.

USA TODAY

Bird flu scare latest to rattle South Korea's Winter Olympics

Julian Ryall, Deutsche Welle Published 11:09 a.m. ET Nov. 28, 2017 | Updated 11:44 a.m. ET Nov. 28, 2017



(Photo: Yonhap, EPA)

TOKYO — Local governments in South Korea have called on operators of farms close to venues that are to be used in February's Winter Olympic Games to slaughter around 6,000 ducks and chickens after avian influenza was discovered on a duck farm in North Jeolla Province.

The H5 strain of the highly pathogenic avian influenza virus - commonly known as "bird flu" - is common in bird populations but has also made the jump to humans. In July 2013, the World Health Organization (WHO) said it had confirmed 630 cases in humans in the previous decade, resulting in 375 deaths.

Organizers of the 2018 games are desperate to play down fears of an outbreak among spectators or athletes taking part in the games, which run for 16 days from February 9, 2018, and the Paralympic Winter Games, which will be held over nine days from March 9 next year.

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11. Plague
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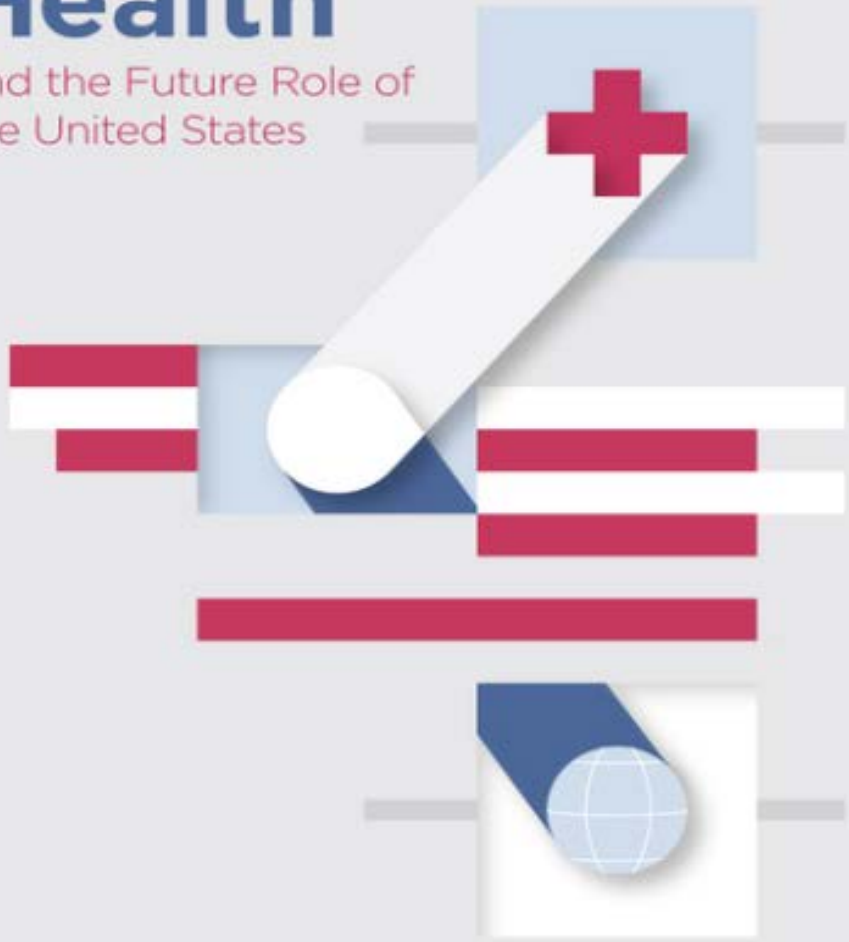
The National Academies of
SCIENCES · ENGINEERING · MEDICINE

CONSENSUS STUDY REPORT

Global Health

and the Future Role of the United States



EMERGING INFECTIOUS DISEASES®

CDC

Global Health Security

Supplement to December 2017

Alonso Marmion-Bunnell (b. 2001), 28.616, 2017. Watercolor and pen on paper, 16 in x 20 in/ 40.64 cm x 50.8. Digital image courtesy of the artist/private collection, Atlanta, Georgia, USA.

Global Health Security—An Unfinished Journey

Michael T. Osterholm

This supplement is a timely, comprehensive compendium of the critical work being done by the Centers for Disease Control and Prevention and various partners to enhance and expand the Global Health Security Agenda. This perspective provides a review of, and comments regarding, our past, current, and future challenges in supporting the Global Health Security Agenda.

"It's no use saying, 'We're doing our best.'
You have got to succeed in doing what is necessary."
—Sir Winston Churchill (*1*)

We have witnessed numerous global public health achievements over the past century, resulting in major gains in life expectancy. These achievements resulted primarily from our unprecedented ability to prevent and control infectious diseases. Because of technological advances, such as electricity, we were able to provide safe water and sewage systems (*2*). We manufactured vaccines and antimicrobial drugs and, in some situations, stored and distributed them via reliable cold chains around the world. We began to refrigerate our pathogen-vulnerable food. Pasteurization of milk supplies became commonplace. Smallpox eradication, the near elimination of *Aedes aegypti* mosquitoes from the Americas, and major gains against killer childhood vaccine-preventable diseases led some to proclaim in the 1970s that we had beaten infectious diseases.

However, as we entered the 1980s, any sense of celebration ended as the HIV/AIDS pandemic took hold and outbreaks of emerging pathogens were increasingly recognized. Key victories began to fade as the growing number of failed states around the world made basic public health activities like vaccination extremely difficult and sometimes dangerous. Furthermore, the more than quadrupling of the human population since 1900, especially skyrocketing growth in megacities of the developing world, and the unprecedented level of global trade and travel (3.6 billion international air passengers in 2016) have ensured that emerging microbial pathogens could navigate the globe quickly. Finally, growing awareness of the looming threat of antimicrobial drug resistance has changed our view about being able to successfully manage and treat many life-threatening infections.

The outbreak of severe acute respiratory syndrome in 2003 was a wake-up call to the global public health community that it lacked an international vehicle for rapidly detecting and responding to a multicountry outbreak, particularly one caused by a respiratory-transmitted agent. Despite the World Health Organization's (WHO's) adoption of the International Health Regulations 2005 to address this concern, the 2009 pandemic of influenza A(H1N1) was a "live fire demonstration" that the world was still ill-prepared for global public health emergencies. Subsequent emerging microbial threats, including cholera in Haiti (2010), Middle East respiratory syndrome coronavirus (MERS-CoV) in the Middle East and Korea (2012), chikungunya in 2013 and Zika in 2015 in the Americas, yellow fever in Africa in 2015–2016 and in South America in 2016–2017, and cholera in Yemen (2017), highlight the challenges in accomplishing effective global public health preparedness. Most notably, the Ebola epidemic in West Africa in 2014–2016 provided a case study of our numerous global response deficiencies (*3*–*5*).

What has changed to make the world a safer place against infectious diseases, given the cumulative lessons learned from severe acute respiratory syndrome, influenza A(H1N1), Ebola, and other emerging threats? The Global Health Security Agenda (GHSA) was launched by 29 countries, WHO, the Food and Agriculture Organization of the United Nations, and the World Organisation for Animal Health in February 2014, just as the Ebola outbreak was unfolding (*6*). GHSA is now a growing partnership of more than 60 nations and organizations designed to help build countries' capacity to elevate global health security. GHSA pursues a multisectoral approach to strengthen global and national capacity to prevent, detect, and respond to human and animal infectious disease threats, whether occurring naturally or accidentally or deliberately spread.

The Centers for Disease Control and Prevention (CDC) supports staff in 35 countries. In 2017, CDC supported work in 49 countries conducting broad-based

Author affiliation: University of Minnesota, Minneapolis, Minnesota, USA

DOI: https://doi.org/10.3201/eid2313.171528

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3. North Korea bioweapons

UPDATES

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REUTERS

#WORLD NEWS DECEMBER 3, 2017 / 8:04 AM / A DAY AGO

Cholera could resurge in Yemen due to lack of aid, fuel: WHO

GENEVA (Reuters) - Another wave of cholera could strike Yemen, where a Saudi-led coalition blockade has cut off fuel for hospitals, water pumps and vital aid supplies for starving children, the World Health Organization (WHO) said on Sunday.

Dr. Nevio Zagaria, WHO country representative in Yemen, told Reuters that 16 percent of Yemeni children under the age of five suffer from acute malnutrition, including 5.2 percent with a severe form that is life-threatening, and the problem is increasing.

Yemen, where 8 million people face famine, is mired in a proxy war between the Iran-aligned Houthi armed movement and the U.S.-backed military coalition that the United Nations says has led to the world's worst humanitarian crisis.

Some 960,000 suspected cases of cholera and 2,219 deaths have been reported since the epidemic began in April, WHO figures show.

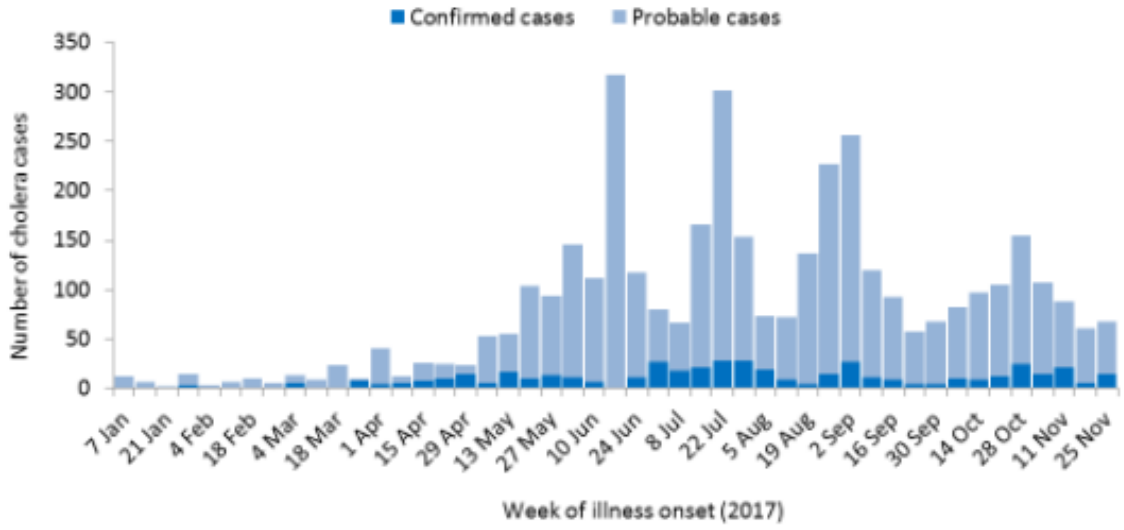
World Health Organization

Cholera – Kenya

Disease Outbreak News
11 December 2017

From 1 January though 29 November 2017, a total of 3967 laboratory-confirmed and probable cases including 76 deaths (case fatality rate = 1.9%) were reported by the Ministry of Health to WHO. Of the cases reported, 596 were laboratory confirmed.

Figure 1: Number of confirmed and probable cases in Kenya reported by week of illness onset from 1 January through 25 November 2017[1]



[1]Date of illness onset is missing for 92 cases.

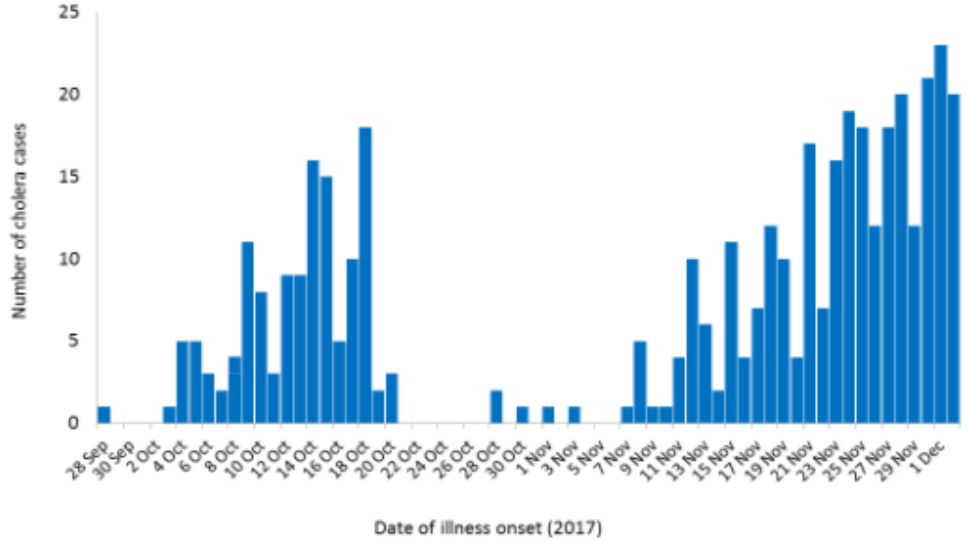
World Health Organization

Cholera – Zambia

Disease Outbreak News
11 December 2017

On 6 October 2017, the Minister of Health declared an outbreak of cholera in the Zambian capital, Lusaka. From 28 September through 7 December 2017, 547 cases including 15 deaths (case fatality rate = 1.8%), have been reported since the beginning of the outbreak. The initial outbreak period was from 28 September through 20 October. From 21 October through 4 November 2017 there were less than five cases reported each week. However, from 5 November 2017 an increase in the number of cases was observed with a total of 136 cases reported in the week beginning 26 November.

Figure 1: Number of cholera cases in Zambia reported by date of illness onset from 28 September to 2 December 2017



REUTERS

#HEALTH NEWS DECEMBER 12, 2017 / 5:03 AM / A DAY AGO

Cholera resurges in Zambian capital Lusaka, WHO says

GENEVA (Reuters) - Cholera has killed 15 people and made 547 sick in Zambia's capital Lusaka and the rising caseload is expected to grow further as the rainy season starts, according to the World Health Organization.

The outbreak began on Sept. 28 but appeared to die down by Oct 20, with fewer than five patients reported weekly until Nov. 5. But then the number of cases surged, with 136 in the week beginning Nov. 26.

The main affected areas are the densely populated districts of Lusaka, Chipata and Kanyama, where poor sanitation may favor the spread of the disease, WHO said late on Monday.

"The coming of the rainy season, coupled with inadequate water supply and sanitation, increases the risk of outbreaks in Lusaka and other parts of the country," WHO said.

There is also a high risk of disease outbreaks in Zambia's Nchelenge refugee camp, which is more than 1,000 km from Lusaka, and holds more than 60,000 refugees, mainly from Democratic Republic of Congo, which is also suffering a cholera outbreak.

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

News Scan for Nov 03, 2017

New polio cases detected in Afghanistan, Syria, DRC

In its weekly update, the Global Polio Eradication Initiative (GPEI) described two cases of wild poliovirus in Afghanistan as Syria and the Democratic Republic of Congo (DRC) each reported a new case of vaccine-derived polio.

The first case in Afghanistan was announced last week in an advance notice. The patient is a girl, age 8 months, in Afghanistan's Kandahar province. The baby's onset of paralysis was Oct 2. She had no previous vaccination against poliovirus. Next week, the GPEI will report the details of another wild poliovirus case in Nangarhar province, Afghanistan, the organization said in the update. Onset of paralysis for that case was Oct 11.

Both Syria and the DRC reported a case of vaccine-derived polio. There have now been 53 cases of vaccine-derived polio in Syria this year. The latest involves a 15-month-old child from Mayadin district, Deir ez-Zur governorate. The child had received one dose of oral polio vaccine and no doses of injected polio vaccine.

In DRC, a patient who had symptom onset on Sep 14 was diagnosed as having type 2 vaccine-derived polio. This is the tenth case of vaccine-derived polio in DRC this year.
Nov 1 GPEI report

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

News Scan for Nov 10, 2017

More cases of vaccine-derived polio reported in Syria

The Global Polio Eradication Initiative (GPEI) today reported 10 new cases of vaccine-derived polio involving type 2 viruses in Syria this week, bringing the total of vaccine-derived cases in Syria to 63 this year.

All confirmed Syrian cases have involved onset of paralysis between Mar 3 and Aug 25. In addition to the 10 confirmed cases, four positive contacts have been reported, all 14 in Deir ez-Zur governorate, Syria.

Another round of inactivated polio vaccine (IPV) will begin in Damascus and surrounding areas on Nov 19, the GPEI said.

Today's report also noted that a case attributed to wild poliovirus in Afghanistan that was announced last week is now confirmed. Onset of paralysis was Oct 11, but no other details about the patient are available. Afghanistan has reported nine cases of wild poliovirus infection this year.

Nov 10 GPEI report

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

News Scan for Nov 27, 2017

Seven new vaccine-derived polio cases reported in Syria

There are seven new circulating vaccine derived poliovirus type 2 (cVDPV2) cases reported in Syria, all from the war-torn Deir Ez-Zor governorate. The Global Polio Eradication Initiative announced the cases in its most recent weekly report.

Syria now has 70 cases of cVDPV2 this year, with the most recent onset of paralysis reported on Sep 9. Last year, the country did not report any cases. The Syrian Ministry of Health requested 1 million doses of oral polio virus vaccine and 500,000 inactivated polio vaccine to conduct what will be the third immunization campaign in that country. The campaign, like the previous two, will target children under the age of 5.

The GPEI also said that the World Health Organization (WHO) polio emergency committee at a Nov 14 meeting that polio remains a global threat and is still a public health emergency of international concern (PHEIC). The committee, which has met 15 times before, reconvenes about every 3 months, or more often if needed, to reevaluate the global polio threat.

"The Committee was very concerned by the size of the outbreak in the Syrian Arab Republic, and the difficulty of reaching target populations because of the conflict," the WHO said. "As type 2 population immunity rapidly wanes, the risk of spread within the Syrian Arab Republic and beyond its borders will increase substantially, meaning urgent action is needed to stop transmission."

Nov 22 GPEI report
Nov 14 WHO statement

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

News Scan for Dec 01, 2017

GPEI confirms another polio case in Afghanistan

The Global Polio Eradication Initiative (GPEI) announced another new case of wild poliovirus detected in Muhmand-Dara district, in the Nangarhar province of Afghanistan.

The patient had paralysis onset on Nov 5, the GPEI said in its weekly report. The total number of officially reported wild poliovirus cases in Afghanistan in 2017 now stand at 11.

Afghanistan, along with neighboring Pakistan and Nigeria, is one of the last few countries where polio virus is endemic. There have been 16 wild poliovirus cases this year, compared with 34 reported in 2016.

GPEI said health workers in Afghanistan will launch another vaccination campaign in the second half of December.

Nov 29 GPEI update

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

4. Avian influenza
5. Global health security
6. Cholera and Polio
7. Global TB
8. Viral Hepatitis
9. Monkeypox
10. Zika and Chikungunya
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Despite progress, WHO paints 'grim' picture of global TB

Filed Under: Tuberculosis; Antimicrobial Stewardship

Chris Dall | News Reporter | CIDRAP News | Oct 30, 2017

USAID Asia

After a 7-year battle with extensively drug-resistant tuberculosis (XDR-TB), a fight that derailed a promising career in business, took him away from his family, and cost him a section of a lung and some of his hearing, Enrique Delgado believes he's one of the fortunate ones.

"Despite all the challenges, I'm lucky to be among the 20% of patients with XDR who survive, and do not suffer 100% side effects," Delgado told an audience today at the National Press Club, where he joined officials from the World Health Organization (WHO), the US Agency for International Development, and the United Nations (UN) to announce the release of the WHO's Global Tuberculosis Report 2017.

Delgado's experience highlights the challenges that remain in the fight against the world's leading infectious disease killer. While the report shows progress against TB has been made, including a 37% reduction in the TB mortality rate since 2000, it also shows that reducing the global burden of the disease will take time. Overall, there were an estimated 10.4 million new cases of TB in 2016, and 1.7 million deaths, including 400,000 people who were co-infected with HIV.

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CIDRAP Center for Infectious Disease Research and Policy

Global health ministers commit to end TB

Filed Under: Antimicrobial Stewardship; Tuberculosis

Lisa Schnirring | News Editor | CIDRAP News | Nov 17, 2017

koSS/iStock

Capping off the end of the first-ever World Health Organization (WHO) health minister meeting on ending tuberculosis (TB) under way in Moscow this week, representatives from 114 countries today agreed on an urgent set of actions called the Moscow Declaration to End TB.

Though global efforts to cut the TB burden have saved an estimated 53 million lives since 2000 and dropped the worldwide mortality rate to 37%, the WHO said progress in many countries has stalled, knocking global targets off-track and resulting in gaps in treatment and prevention.

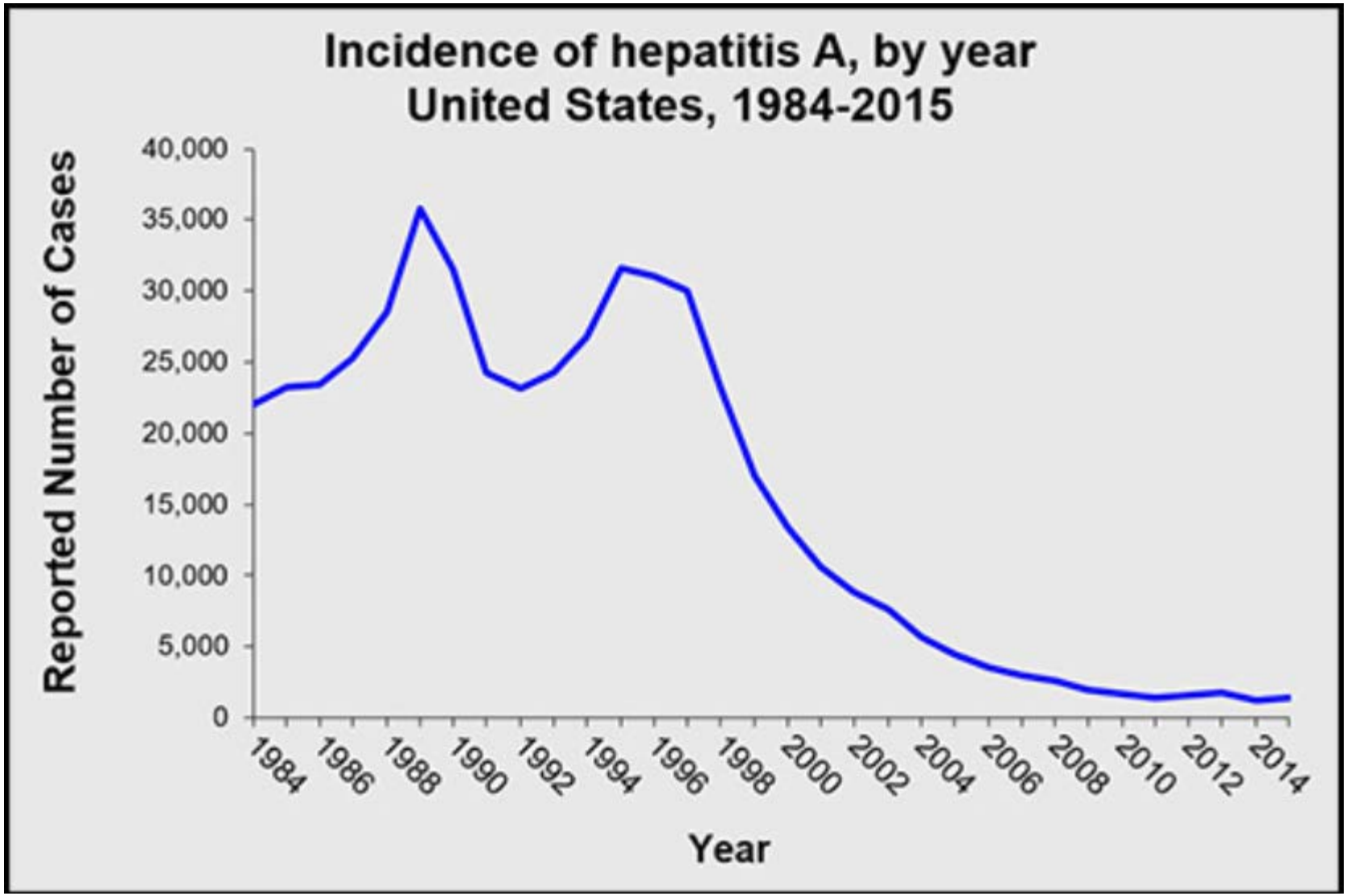
Despite progress, TB still kills more people than any other infectious disease, is the leading cause of death in people with HIV, and is complicated by antimicrobial resistance.

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

4. Avian influenza
5. Global health security
6. Cholera and Polio
7. Global TB
8. Viral Hepatitis
9. Monkeypox
10. Zika and Chikungunya
11. Plague
12. Other (MERS, Lyme disease)


Incidence of hepatitis A, by year
United States, 1984-2015
Reported Number of Cases
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
Year

California Department of PublicHealth

Hepatitis A Outbreak in California

CDPH Weekly Update as of December 1, 2017

A large hepatitis A outbreak is ongoing in California. The majority of patients in this outbreak report experiencing homelessness and/or using illicit drugs in settings of limited sanitation. The outbreak is being spread person-to-person and through contact with a fecally contaminated environment. The Centers for Disease Control and Prevention (CDC) notes that person-to-person transmission through close contact is the primary way people get hepatitis A in the United States.

San Diego, Santa Cruz, and Los Angeles Counties have declared local outbreak status. Outbreak associated cases have been confirmed in other California jurisdictions.

Table. Outbreak Associated Hepatitis A infections by California Jurisdiction

Jurisdiction	Cases	Hospitalizations	Deaths
San Diego	567	382	20
Santa Cruz	76	33	1
Los Angeles	11	8	0
Other	18	7	0
Total	672	430	21

Los Angeles Times

Op-Ed Want L.A's hepatitis A crisis to get even worse? Follow Venice Beach's lead

NOVEMBER 20, 2017, 4:00 AM

With Southern California confronting a deadly epidemic of hepatitis A, a highly contagious ailment that spreads through contact with the feces of an infected person, urban centers ought to be doing everything possible to improve sanitation. That's especially true in enclaves frequented by the homeless.

Los Angeles leaders are well aware that skid row's nearly 2,000 homeless people "have less access to bathrooms than Syrian refugees living in a United Nations camp overseas," as advocates for the unhoused complained last summer while calling for scores of additional portable toilets. Orange County faces a similar challenge with homeless people who camp by the Santa Ana River near Angel Stadium.

In comparison, Venice Beach, another hub of homelessness, has a key infrastructural advantage: Because the beach and the boardwalk are among the most visited tourist destinations in the state, there are public restrooms built to accommodate crowds on summer days. That means plenty of restrooms for the homeless, at least during the off-season and at night.

There the matter would rest in a well-run city.

WIRED

ADAM ROGERS SCIENCE 11.20.17 07:00 AM

CALIFORNIA'S HEPATITIS A OUTBREAK IS THE FUTURE POKING US IN THE FACE

IT WASN'T JUST that people were getting sick—it was who. And how many.

Hepatitis A is a viral disease that primarily attacks the liver, and if it gets serious—as it can in the elderly and immune-compromised people—it can be fatal. But the graph of cases in the US over time looks like the second, fun half of a roller coaster ride. In the early 1970s, nearly 10,000 people a year got it. By the mid-1980s, the number was half that. (Wheee!) In 1996, the Centers for Disease Control and Prevention started recommending vaccination, and from there it was a fast, bracing plunge to just *tens* of cases a year.

Then, this past summer, people started getting sick in San Diego. Just a handful at first, among those most at risk. Like HIV, hep A gets transmitted through sex and sharing needles. You can also get it through fecal-oral contact—as

The Seattle Times

Southeastern Michigan facing outbreak of hepatitis A cases

Originally published December 11, 2017 at 12:18 pm

DETROIT (AP) — Michigan health officials say the southeastern part of the state is seeing a serious outbreak of hepatitis A cases.

An analysis by the Detroit Free Press found that Michigan has led the U.S. in hepatitis cases per capita this year, with more than 500 reported cases so far. California was the only state with more cases reported this year, with more than 660.

"Typically what we would see this time of year is about 14 times lower than what we're currently dealing with," said Angela Minicuci, spokeswoman for the Michigan Department of Health and Human Services. "I don't know if we've seen a hepatitis A outbreak like this before."

There have been 20 deaths linked to hepatitis A in southeastern Michigan since August 2016, The Detroit News reported.

Detroit Free Press
PART OF THE USA TODAY NETWORK

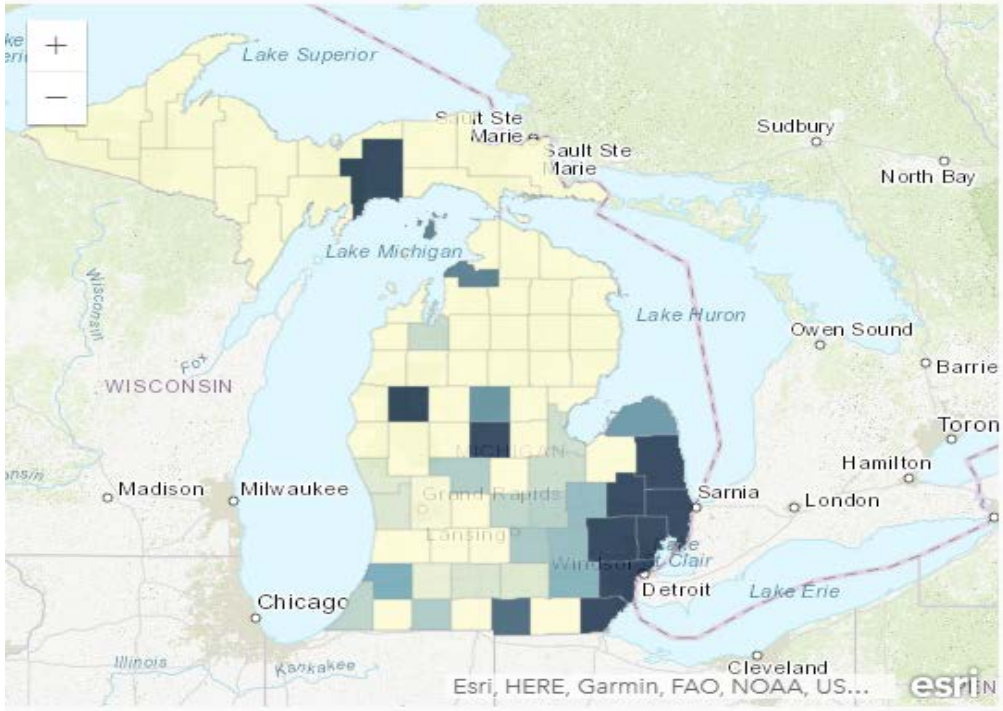
Michigan is facing an alarming Hepatitis A outbreak

Katrease Stafford and Kristi Tanner, Detroit Free Press Published 6:00 a.m. ET Dec. 11, 2017 | Updated 8:02 a.m. ET Dec. 11, 2017

(Photo: jarun011, Getty Images/iStockphoto)

An alarming number of hepatitis A cases have swept across southeast Michigan since August 2016 in what public health officials said is one of the largest outbreaks to occur in the United States since a vaccine was widely introduced two decades ago.

In 2017 alone, Michigan has led the nation in hepatitis cases per capita, according to a Free Press analysis. More than 500 cases have been reported this year.



HOT TOPICS

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10. Zika and Chikungunya
11. Plague
12. Other (MERS, Lyme disease)

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

Monkeypox confirmed in 6 more Nigerian patients

Stephanie Soucheray | News Reporter | CIDRAP News | Oct 30, 2017

The Nigerian Center for Disease Control (NCDC) announced today that monkeypox has been confirmed in six more patients, bringing the total number of confirmed cases to nine.

Two of the new cases are from Bayelsa state (where the three earlier cases were reported), two are from Akwa Ibom state, and one each from Enugu state and the Federal Capital Territory (FCT). All but FCT are located along the southern tip of the country.

As of Oct 25, 94 suspected cases have been reported in 11 states. No deaths have been recorded among any of the confirmed or suspected cases.

The NCDC said investigations are currently under way to see if any of the new cases are connected to the three cases confirmed in Bayelsa late last month.

Nathalie van Vliet, CIFOR / Flickr cc

Bushmeat, or wild game, can be a source of monkeypox infection.

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News Scan for Nov 07, 2017

Nigeria's monkeypox total climbs to 38 confirmed cases

Nigeria's number of lab confirmed monkeypox cases has jumped from 9 to 38 from eight states and the Federal Capital Territory (FCT), where the country's capital Abuja is located, though the number of cases reported over the last 2 weeks shows signs of slowing, the Nigeria Center for Disease Control (NCDC) said in its latest update.

Over the course of the outbreak, which began in late September, 116 suspected cases from 20 states and the FCT have been reported. Rapid response teams have been deployed to four states: Akwa Ibom, Bayelsa, Delta, and Enugu.

The epidemiologic investigation has found that twice as many males as females have been infected, and patients ages 21 to 40 years are the most affected age-group. States with the highest numbers of suspected and confirmed cases are in the southern part of Nigeria. So far no deaths have been reported.

As of late last week, 103 patient samples have been collected and sent for testing to the country's national laboratory in Lagos. Authorities are following 145 contacts, and 59 contacts have already completed their 21-day monitoring period.

Nov 3 NCDC monkeypox outbreak situation report

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News Scan for Nov 21, 2017

Nigeria confirms 4 more monkeypox cases but notes slowdown

The Nigerian Centre for Disease Control (NCDC) confirmed four more monkeypox cases but said the number of suspected cases has declined over the last 3 weeks. There are now 42 confirmed and 146 suspected cases reported since outbreak began in October.

All confirmed cases have been found in the 10 southernmost states of Nigeria. A total of 22 states have reported suspected cases.

The report said 9 of 12 swabs that were negative for monkeypox were positive for chickenpox.

So far there have been no deaths attributed to monkeypox, a rare virus closely related to smallpox. This outbreak, however, is Nigeria's largest to date. More men than women have been infected, and most patients have been between 21 and 30 years of age.

The NCDC said they will be taking a One Health approach to monitoring the outbreak. Humans contract monkeypox from infected animals.

Nov 19 NCDC update

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News Scan for Nov 29, 2017

Nigeria confirms 14 new monkeypox cases

In a separate update, the NCDC confirmed 14 new monkeypox cases in the past week, bringing the outbreak to 56 confirmed cases, making it Africa's largest.

So far there have been no deaths recorded during the outbreak, and the NCDC said the number of suspected cases has declined over the last month.

Three new states, Imo, Katsina and Nasarawa, reported cases of the smallpox-like virus. A total of 155 suspected cases have been reported across much of Nigeria.

Monkeypox is spread through contact with an infected animal, and can be caused by consuming undercooked bush meat. Nigerians are advised to stay away from sick animals and practice good hygiene.

Nov 23 NCDC situation report

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

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7. Global TB
8. Viral Hepatitis
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12. Other (MERS, Lyme disease)

ScienceNews
MAGAZINE OF THE SOCIETY FOR SCIENCE & THE PUBLIC

Zika cases are down, but researchers prepare for the virus's return

Plenty of questions remain about transmission and vaccine development

BY AIMEE CUNNINGHAM 8:26AM, DECEMBER 13, 2017

10
2017 Top 10
See full list

One of the top stories of 2016 quietly exited much of the public's consciousness in 2017. But it's still a hot topic among scientists and for good reasons. After Zika emerged in the Western Hemisphere, it shook the Americas, as reports of infections and devastating birth defects swept through Brazil and Colombia, eventually reaching the United States. In a welcome turn, the number of Zika cases in the hemisphere this year dropped dramatically in the hardest-hit areas.

But few scientists are naïve enough to think we've seen the last of Zika. "The clock is ticking for when we will see another outbreak," says Andrew Haddow, a medical entomologist at the U.S. Army Medical Research Institute of Infectious Diseases in Frederick, Md.

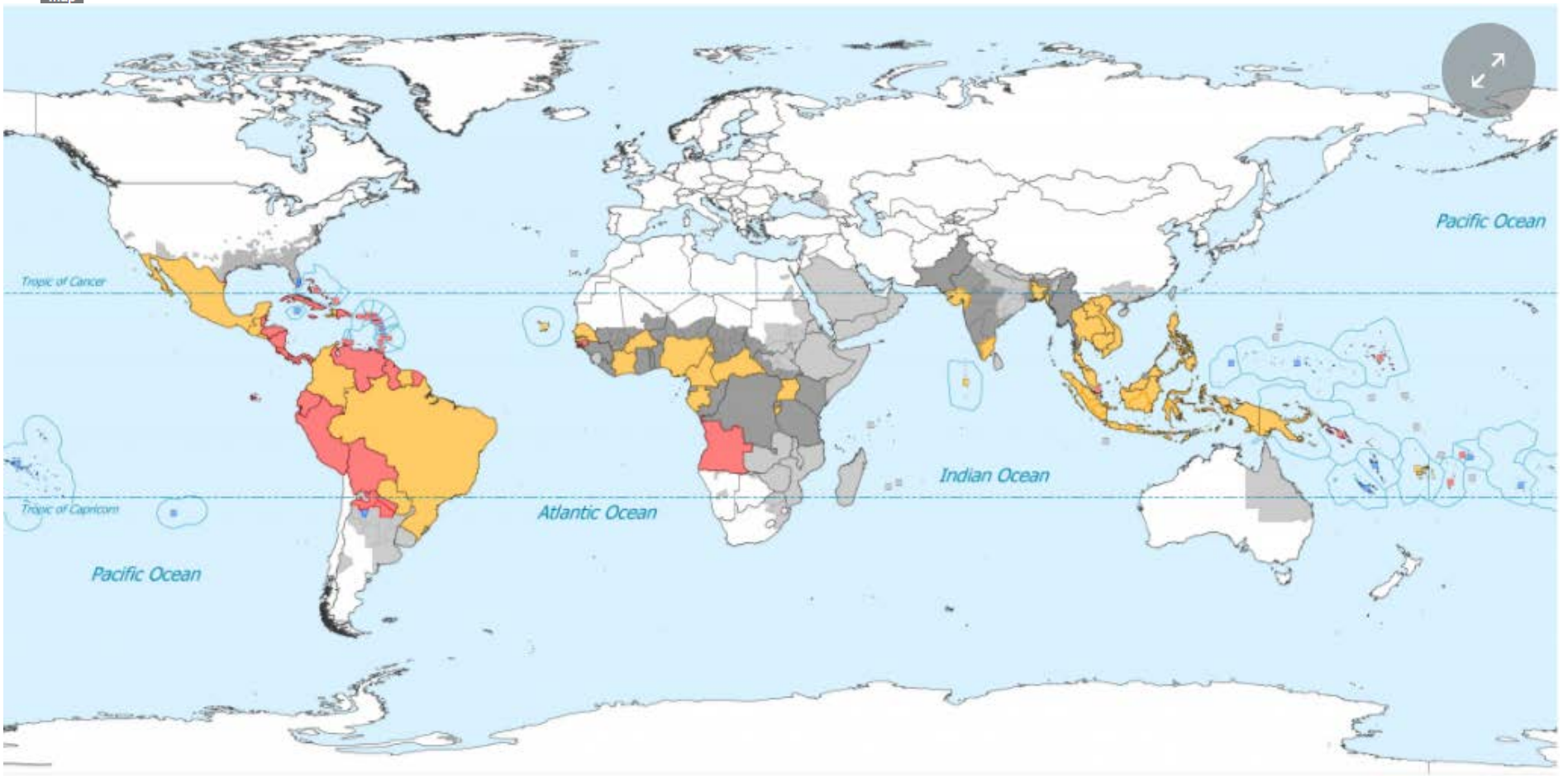
Researchers' to-do list for tackling this once-unfamiliar virus is daunting. But progress has been made, especially in learning more about Zika's biology and interactions with its hosts, and in developing a safe and effective vaccine.

In 2017, the epidemic lost steam because many areas have probably developed herd immunity to the virus (*SN: 11/11/17, p. 12*). Zika infected a large number of people, who are now presumably immune, and those exposed provide indirect protection to people who haven't yet encountered Zika. If the mosquito-borne virus can't find enough people to infect, it can't easily spread.

European Centre for Disease Prevention and Control

Current Zika transmission worldwide

map

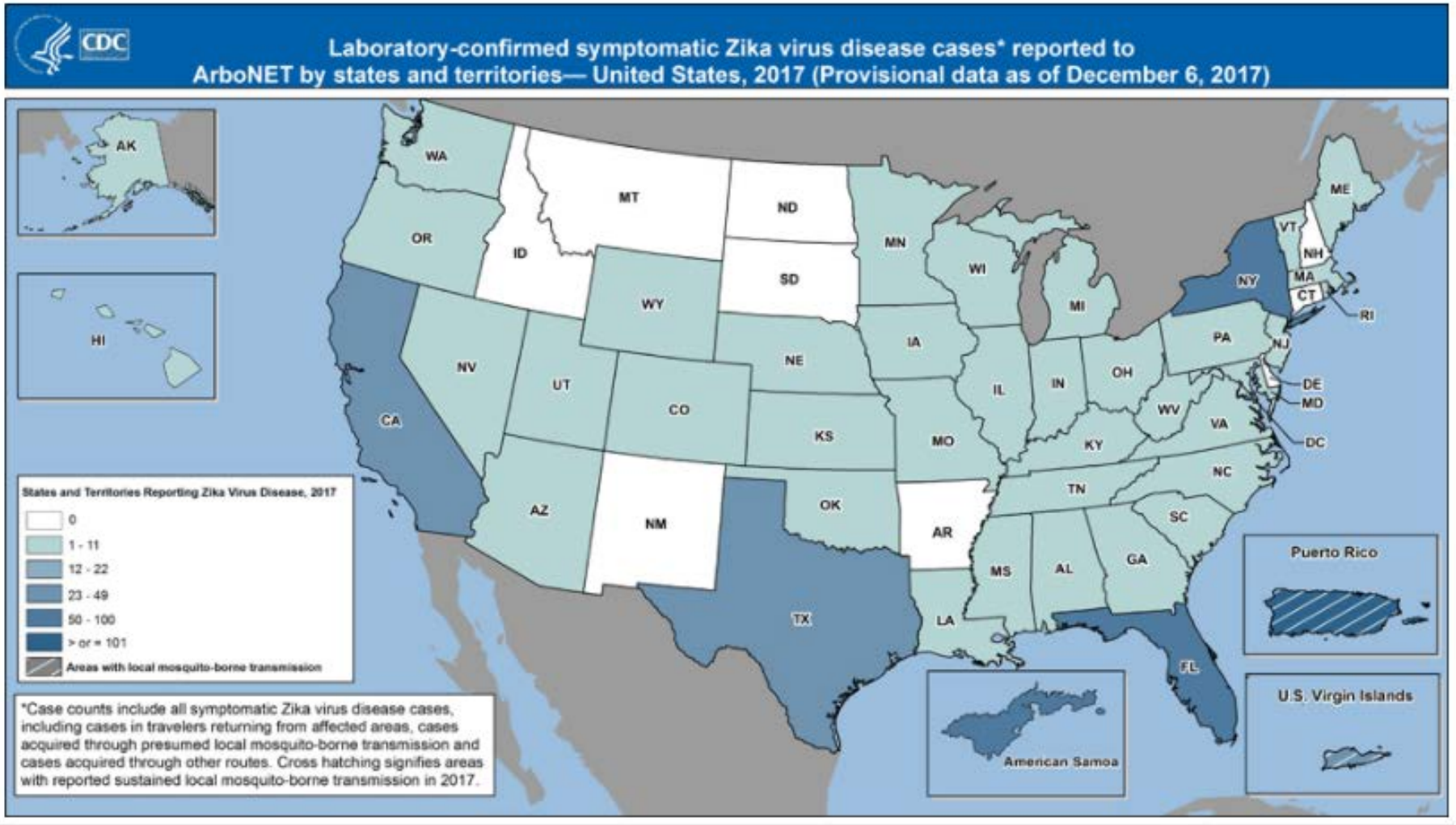


Country classification category (Cat.) for Zika virus transmission

- Areas with virus transmission following virus new/re introduction (WHO Cat. 1)
- Areas with virus transmission following previous virus circulation (WHO Cat. 2)
- Areas with interrupted transmission (WHO Cat. 3)
- Areas bordering a WHO Cat. 2 area (sub-category of WHO Cat. 4)
- Areas with potential for transmission (sub-category of WHO Cat. 4)
- Maritime Exclusive Economic Zones for non-visible areas

ECDC. Map produced on 30 Nov 2017.
Map your data at: https://emma.ecdc.europa.eu

Cases by State and Territory



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News Scan for Nov 21, 2017

Animal Zika studies shed light on transmission, paralysis complications

Experiments in guinea pigs to explore possible routes of Zika transmission found that infected animals can pass the virus to healthy cagemates, perhaps through tears or saliva, researchers from China reported today in *Nature Communications*.

Zika transmission through sexual contact has been clearly established, but much less is known about other routes of human-to-human spread. The case of a US man from Utah who contracted the virus in 2016 after caring for his sick father has confounded researchers.

In the new report, the study team first confirmed that guinea pigs were susceptible to Zika infection after subcutaneous injection. Then when they place infected animals in cages with healthy animals, all of the uninfected animals readily developed viremia at levels similar to the experimentally infected animals. After just 1 day, Zika RNA was found in blood, saliva, and tears.

Researchers compared two Zika strains, one from 2010 in Cambodia and the other from 2016 in Venezuela. Response in guinea pigs to the earlier strain was slightly attenuated.

Another round of experiments showed that guinea pigs can be infected with Zika through intranasal inoculation, with virus found in several tissues, including the brain and parotid glands. In experiments with macaques, the team found that the animals can efficiently contract Zika after intranasal and intragastric inoculation.

STAT

Zika virus, not vaccine or insecticide, linked to birth defects in Brazil

By HELEN BRANSWELL @HelenBranswell / DECEMBER 13, 2017

In the fall and early winter of 2015, a startling number of infants in northeastern Brazil were born with abnormally small heads. Mounting global concern gave rise to theories about what was responsible. And while public health authorities fairly quickly fingered the Zika virus as the culprit, a couple of other theories established deep roots on social media platforms.

But the just-published final report of a study conducted in Brazil discounts those two theories. The work, by Brazilian scientists, suggested there is no link between the cases of microcephaly and exposure to the insecticide pyriproxyfen, nor to maternal vaccination during pregnancy.

The Brazilian government had begun treating drinking water sources with pyriproxyfen in 2014 to control Aedes aegypti, the main mosquito species that transmits Zika, dengue, and other viruses. And in late November of that year, it also started offering pregnant women a vaccine to protect against tetanus, diphtheria, and pertussis.

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Phase 1 trials promising for 2 Zika vaccines, including shelved one

Filed Under: Zika

Lisa Schnirring | News Editor | CIDRAP News | Dec 05, 2017

Results from phase 1 trials of two different types of Zika vaccines, one of them an inactivated vaccine recently shelved by Sanofi over shaky research support and other challenges, found that they were safe and immunogenic.

Foremniakowski / iStock

One of the studies focused on two different version of a DNA-based vaccines, while the other detailed findings for the inactivated vaccine. Work on both vaccine was done with support from the National Institute of Allergy and Infectious Diseases (NIAID), and both studies were published yesterday in *The Lancet*.

A dramatic fall in Zika cases prompted the US government to reshuffle its Zika-related research priorities. About 2 month ago, Sanofi announced it was halting work on its candidate inactived Zika vaccine in the face of scaled-back funding from the Biomedical Advanced Research and Development Authority (BARDA). Also, a US Army licensing arrangement with Sanofi ran into tough political headwinds, with some politicians urging the government to secure an agreement to limit the resulting vaccine's price.

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Vector-borne Disease Scan for Dec 04, 2017

PAHO reports 1,100 new chikungunya cases in recent weeks

In the past month the Pan American Health Organization (PAHO) has reported 1,106 new chikungunya infections, bringing the yearly total to 184,636 confirmed, suspected, and imported cases.

Because of the low numbers, CIDRAP News has not reported on the outbreak since PAHO's Nov 3 update. During the most recent weeks, Peru reported by far the highest increase, with 782 new cases and 2,450 total for the year, according PAHO's Dec 1 update. Colombia was next, with 52 new cases, for a total of 1,047 so far in 2017, and Bolivia reported 45 new cases and 3,326 total.

Several other nations reported small increases, including the United States, which has now confirmed 93 imported cases this year. A host of nations, however, including Brazil, which has reported more than 90% of this year's total, have not reported on their chikungunya situation for many weeks. Brazil has not reported its numbers to PAHO for 3 months.

Since the outbreak began in 2013 on the Caribbean island of St. Martin, the Americas region has reported 2,570,767 cases.

In related news, a Dec 1 study in *Travel Medicine and Infectious Disease* reports that chronic inflammatory rheumatism is common in patients even a full year after infection. Colombian scientists reported that 38 of 65 lab-confirmed patients (58.5%) had at least one persistent rheumatologic symptom in the year after infection, and 28 (43.1%) had chronic polyarthralgia—arthritis pain in more than one joint.

Dec 1 PAHO update

Dec 1 *Travel Med Infect Dis* study

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

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5. Global health security
6. Cholera and Polio
7. Global TB
8. Viral Hepatitis
9. Monkeypox
10. Zika and Chikungunya
11. Plague
12. Other (MERS, Lyme disease)

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News Scan for Nov 20, 2017

Madagascar's plague outbreak shows more signs of slowing

In the latest update on Madagascar's plague outbreak today, the World Health Organization (WHO) Regional Office for Africa said that from Nov 6 to Nov 17, officials have confirmed 1 more plague case and reported 215 new probable or suspected cases, raising the total to 2,267 cases, 195 of them fatal.

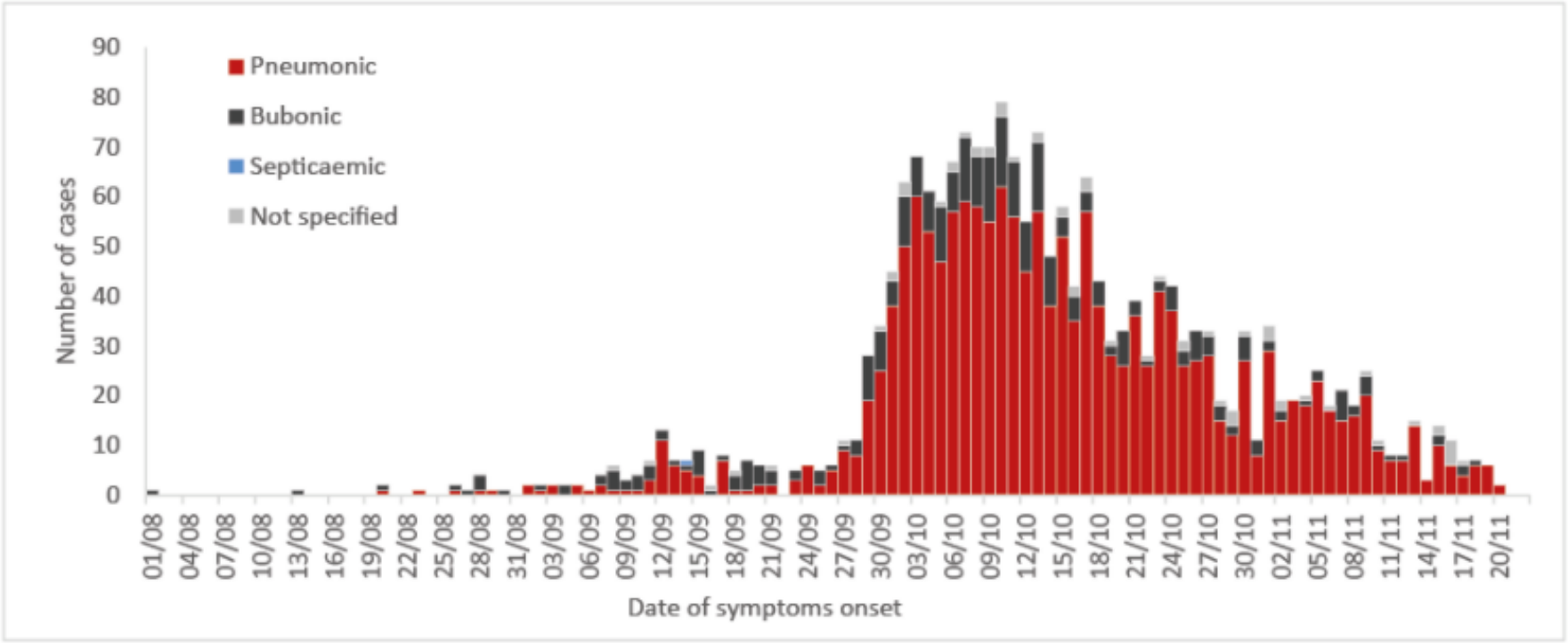
Though plague is endemic in Madagascar, with a season that usually runs from September to April, the country has seen an early start of the season with an unusual spike in the potentially fatal pneumonic form of the disease, which accounts for 76% of the outbreak total. The last confirmed pneumonic case was reported on Nov 14 and the onset of the last bubonic case was Nov 7.

The WHO said cases have steadily declined since the middle of October. It added that it expects more cases to be reported throughout the rest of the plague season and that maintaining response operations, such as active case findings and contact tracing, will be critical in driving down the risk of the disease in the months ahead.

Nov 20 WHO plague update

World Health Organization

Figure 1: Number of confirmed, probable and suspected plague cases in Madagascar reported by date of illness onset from 1 August through 22 November 2017



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News Scan for Nov 28, 2017

WHO declares Madagascar plague outbreak contained

In an update yesterday, the World Health Organization (WHO) said the 2,000-plus-case outbreak of plague in Madagascar has now been contained, though it reported 58 new cases.

"Due to concerted national and international response the current and unprecedented outbreak of plague in Madagascar, which started on 1 August 2017, has been contained," The agency said in its latest situation update.

As of Nov 24, officials have reported 2,384 confirmed, probable, and suspected cases, including 207 deaths, for a case-fatality rate of 8.7%. Of the total, 1,828 (77%) have been classified as pneumonic plague and 347 (15%) as bubonic plague, with 208 (9%) remaining unclassified. Of the 1,828 clinical pneumonic cases, which is the more serious form, 347 (21%) have been confirmed, 614 (34%) are listed as probable, and 824 (45%) remain suspected. All 33 isolates of *Yersinia pestis*—the bacterium that causes plague—have been cultured and are sensitive to all recommended antibiotics.

Of the 58 new cases reported last week, 1 is confirmed, 8 are probable, and 49 are suspected. Cases have been reported in exactly half of the country's 114 district, with Analamanga Region in central Madagascar the hardest hit. As of Nov 24, only 11 patients remain hospitalized for plague.

The disease is endemic in Madagascar, with a season that typically runs during the rainy season from September to April, but the size of this outbreak and the number of pneumonic plague cases are unprecedented in recent decades.

Nov 27 WHO update

HOT TOPICS

1. Influenza (surveillance, vaccine, antivirals)
2. Dengue vaccine
3. North Korea bioweapons

UPDATES

4. Avian influenza
5. Global health security
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7. Global TB
8. Viral Hepatitis
9. Monkeypox
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11. Plague
12. Other (MERS, Lyme disease)

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News Scan for Nov 27, 2017

Saudi Arabia reports 2 new MERS cases

The Saudi Arabian Ministry of Health (MOH) reported two new cases of MERS-CoV over the past week, according to its daily updates on the disease.

On Nov 20, a 63-year-old Saudi man from Bisha in the country's southwest was diagnosed as having a MERS-CoV (Middle East respiratory syndrome coronavirus) infection after presenting with symptoms. He is in stable condition. Investigators found that the man had a history of direct contact with camels.

Also, on Nov 24 the MOH reported an apparent fatal infection in a 64-year-old Saudi woman from Buraidah, which is located in the central Saudi Arabia. The ministry listed her condition as critical, but the report also suggests that she died from her illness. The source of her virus is reported as primary, meaning she didn't likely contract it from another person.

Saudi Arabia's MERS-CoV case count since 2012 has now reached 1,748, including 708 deaths. Three patients are still being treated, according to the MOH.

Nov 20 MOH update

Nov 24 MOH update

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News Scan for Nov 28, 2017

MERS reported in 2 Riyadh teens

The Saudi Arabian Ministry of Health (MOH) today reported two new cases of MERS-CoV in teenage boys from Riyadh.

Both boys are Saudis and presented with symptoms of MERS-CoV (Middle East respiratory syndrome coronavirus) infection. One boy is 15 and in critical condition. His source of infection is listed as "primary," meaning it's unlikely he contracted the virus from another person. A 13-year-old boy is in stable condition and is listed as a household contact of another MERS patient, possibly the 15-year-old.

Saudi Arabia's MERS-CoV case count since 2012 has now reached 1,750, including 708 deaths. Five patients are still being treated, according to the MOH.

Nov 28 MOH report

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News Scan for Dec 04, 2017

New MERS case, death reported in Saudi Arabia

Over the weekend the Saudi Arabian Ministry of Health (MOH) reported one new MERS cases and one death in a previously announced patient.

On Dec 2 the MOH said a 71-year-old Saudi man from Buraydah was in stable condition after presenting with symptoms of MERS-CoV (Middle East respiratory syndrome) illness. The man's source of infection is listed as "primary," meaning it's unlikely he contracted the virus from another person.

Yesterday the MOH reported the death of a 15-year-old Saudi boy in Riyadh. The MOH said he had preexisting illnesses in addition to MERS.

As of yesterday, Saudi Arabia's MERS-CoV total cases since 2012 is 1,752, including 709 deaths. Four people are still being treated for their infections.

Dec 2 MOH report
Dec 3 MOH report

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News Scan for Dec 11, 2017

Saudi Arabia reports new MERS case, fatality

The Saudi Arabian Ministry of Health (MOH) reported a new case of MERS-CoV in Riyadh late on Dec 8 and the death of a previously confirmed patient today.

A 90-year-old Saudi man is in critical condition after presenting with symptoms of MERS-CoV (Middle East respiratory syndrome coronavirus) infection. The patient's source of infection is listed as "primary," meaning it's unlike he contracted the virus from another person.

Today the MOH reported that a previously described patient, a 71-year-old Saudi man from Buraydah, has died. He had preexisting conditions at the time of his MERS diagnosis.

Saudi Arabia's MERS-CoV case count since 2012 has now reached 1,754, including 710 deaths. Three patients are still being treated, according to the MOH.

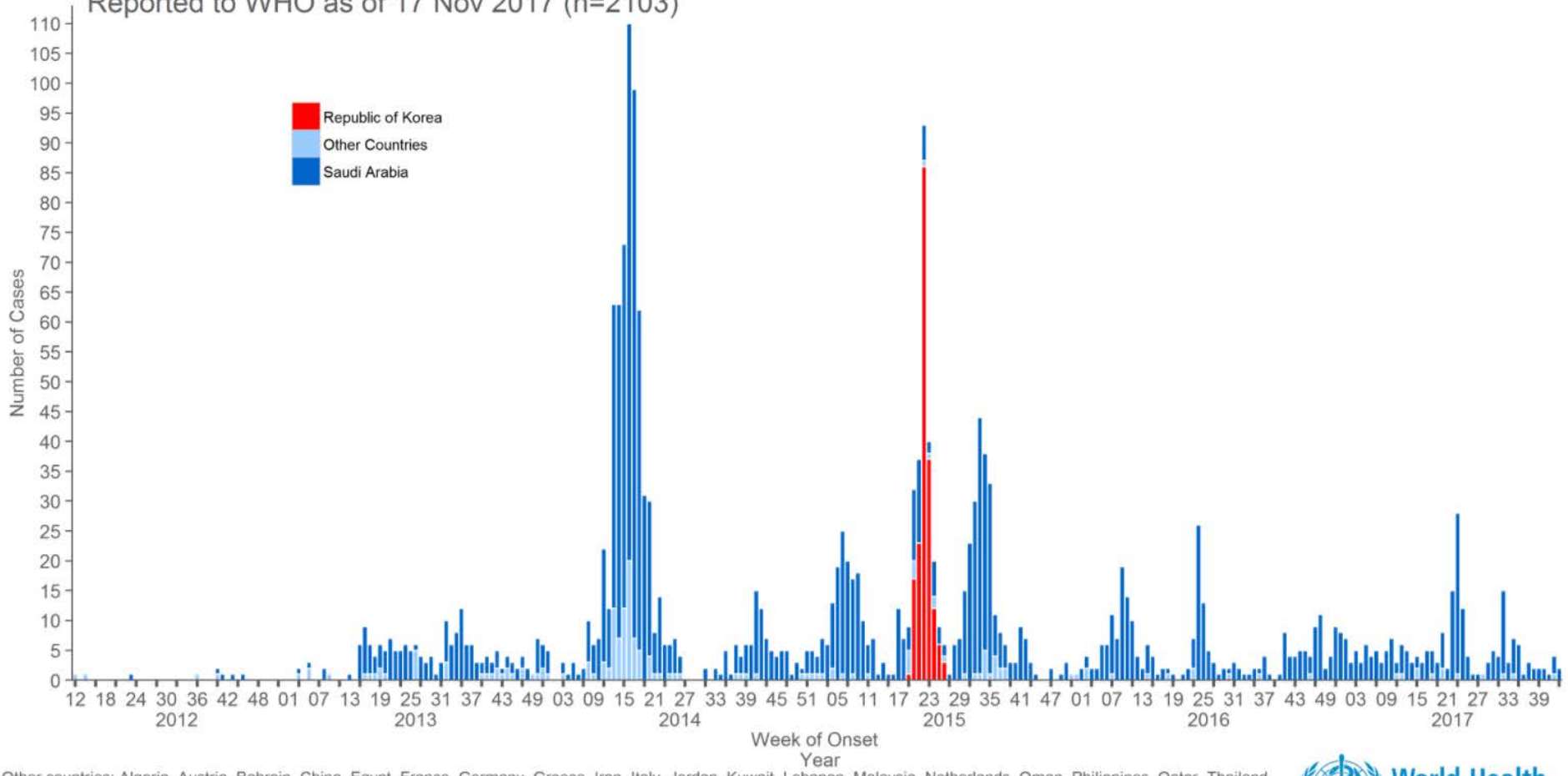
Dec 8 MOH report

Dec 11 MOH report

World Health Organization

Confirmed global cases of MERS-CoV

Reported to WHO as of 17 Nov 2017 (n=2103)



Other countries: Algeria, Austria, Bahrain, China, Egypt, France, Germany, Greece, Iran, Italy, Jordan, Kuwait, Lebanon, Malaysia, Netherlands, Oman, Philippines, Qatar, Thailand, Tunisia, Turkey, United Arab Emirates, United Kingdom, United States of America, Yemen

Please note that the underlying data is subject to change as the investigations around cases are ongoing. Onset date estimated if not available.

World Health Organization

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Lyme disease increases in states that neighbor hot spots

Filed Under: Tick-borne Disease

Lisa Schnirring | News Editor | CIDRAP News | Nov 10, 2017

In its latest report on Lyme disease patterns, the US Centers for Disease Control and Prevention (CDC) said that illness levels are stable or slightly lower in areas that have typically reported the most cases—the Northeast, mid Atlantic, and upper Midwest—but activity is increasing in neighboring states.

The report, published today *Morbidity and Mortality Weekly Report (MMWR)*,also reveals some demographic differences among confirmed and probable cases.

Lennart Tange / Flickr cc

Ixodes scapularis, commonly known as the deer tick or black-legged tick.

Cases confirmed in 48 states

Based on data from 2008 through 2015, the report covers 275,589 confirmed and probable cases. The 208,834 confirmed cases were reported in 48 states, and 41 states reported at least one probable case. The CDC noted that the goal of Lyme surveillance system isn't to record every case, but rather to show trends over time.

CBS New York

New & Improved Testing Could Make Detecting Lyme Disease Easier

December 11, 2017 at 6:19 pm

NEW YORK (CBSNewYork) — Researchers released important news that may make Lyme disease much easier to diagnose.

It came from a scientific conference held at the prestigious Cold Spring Harbor Labs on Long Island.

As CBS2's Dr. Max Gomez reported, test results aren't always crystal clear. Doctors often treat based on symptoms such as joint pain, bullseye rash, and cognitive difficulty.

But that can lead to overtreatment or worse, delayed treatment when blood tests are equivocal.

You wouldn't think a tiny little critter like a tick could cause so much trouble, but if you get bitten by one carrying the Lyme bacterium you could become one of the more than 300,000 people in the United States who get Lyme disease each year.

People like Dana Parish.

"I have a crushing headache, a crushing neckache, never had symptoms before," she told CBS2. "I took a shower and saw a bullseye."

Dana had a few of the classic symptoms of Lyme, especially the rash. But that isn't always the case, which creates a dilemma for doctors and patients alike.

Questions, Comments and Discussion

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December 13th, 2017

Thank you for attending!